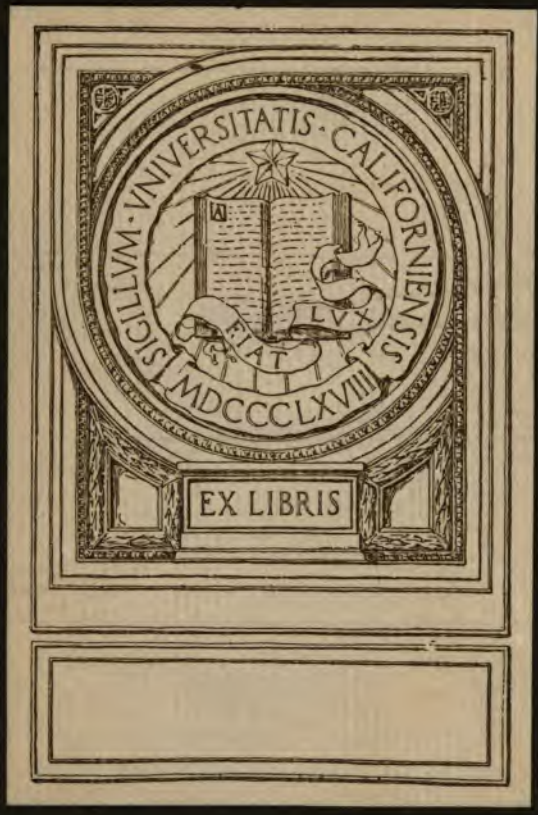
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PROBLEMS TO ACCOMPANY

THE FINANCIAL POLICY OF CORPORATIONS

By

ARTHUR STONE DEWING

THE RONALD PRESS COMPANY
NEW YORK

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PREFACE

This book of problems has been prepared at the request of several teachers of corporation finance in the belief that college classes working in that general field would profit by a discussion of typical cases. The material has been taken, for the most part, from actual experiences, although in the majority of cases irrelevant details have been omitted. The matter has also been simplified, especially in the problems of the latter sections of the pamphlet. Most of the problems have been used by the author in his course on corporation finance at the Harvard School of Business Administration.

It is now a commonplace in educational theory that case instruction is, wherever practicable, the best form of teaching. A student cannot be said to know a subject until he feels sufficiently at home in it to solve its problems. Not only does this kind of exercise test the student's grasp on fundamental principles, but it also affords a form of training which should be the ideal of all educational processes—it creates conditions that force a student to isolate relevant evidence from a mass of detail and weigh this evidence in the light of principles. It creates a mental and moral power that enables a man to meet new situations in any field, wherever his life work may lie.

ARTHUR S. DEWING

Cambridge, Mass.
June 1, 1921.

HINTS TO TEACHERS

This pamphlet consists in a sense of two main divisions. In the first and large division, comprising Parts I–V, problems are given in corporation finance, paralleling the five parts of "The Financial Policy of Corporations" (Ronald Press Company, New York, 1920). So far as possible, there is a correlation between the text of this book and the problems. In Part VI, constituting the second main division, are given a few problems in investment.

The distinction between the point of view of corporation finance and the point of view of investment is fundamental. Financial problems of a corporation are connected with getting capital from the investor as cheaply as possible and under the least arduous terms. The problem for the investor is exactly opposite. It consists of getting the largest income return and the amplest security from the corporation. The student working in these two fields should keep this difference constantly in mind.

Without laying down any rules for the use of these problems, it may be remarked that the writer has found it most useful to assign problems to the class and then to devote a considerable amount of time to discussing the several solutions offered. In many cases, especially with problems covering promotion, expansion and reorganization, there is no absolutely right or absolutely wrong answer. In each case it is a matter of financial expediency. The reasons why one solution of a problem is better than another should be carefully described to the class, so that men will understand that financial practice is a matter of judgment, based in each

case upon individual expediency. It is a mistake for a teacher to insist pedantically that his solution of the problem is the only right one. So far as possible, the class should be conducted as one might conduct the meeting of a large board of directors. The opinion of each member of the class should be given consideration and every one should be led to feel that the reasons back of his judgment are worthy of respect.

So far as possible, moreover, a teacher does well to emphasize the public significance of his subject. It is well to point out that corporation finance is one aspect of a great body of economic questions connected with our modern industrial life, and that no solution of financial problems is permanently sound, which is not at the same time justifiable and wise from the point of view of public welfare. Teachers should also emphasize the fact that sound investment subserves a social purpose insofar as it conserves accumulated capital for productive and socially justifiable enterprises and directs it away from useless highly speculative and socially iniquitous projects.

While the compiler of this pamphlet has no ready and certain method or manner of treating the solution to the problems, certain points appear to be worth noting.

It is absolutely necessary for a student to have clearly in mind the specific end or purpose of the problem. He should be urged to separate in his mind the essential parts of the problem not merely from the mere verbiage but also from the unimportant facts and figures. These essential parts he should study carefully in their relations with each other. Thus if the problem concerns itself with quick assets and these alone, a student should set down first all the information about quick assets and discard entirely from his consideration every other fact and every other possible deduction from irrelevant facts. He should then examine

carefully the data concerning quick assets and make such deductions as the purpose of the problem involves.

In the later sections of the book a considerable number of the problems permit of several answers. A student should be taught to discuss his own solution, indicating the grounds of preference over other possible solutions. He should be required to give reasons for his grounds of preference and to show their bearing on matters of financial policy. Thus in the preparation of the financial plan of a public utility the necessary capital might, in a particular case, be secured either by a small issue of bonds and a small issue of preferred stock or by a large issue of bonds alone. A student who constructs his financial plan according to one or the other of these alternatives should be required to state explicitly the reasons for his choice, and, if possible, the fundamental principles behind these reasons.

There have been inserted three discussions or solutions to problems—problem XXII, page 15, dealing with promotion and consolidation, problem LIX, page 77, dealing with reorganization, and problem LXV, page 109, dealing with investments. In connection with these the attention of the students should be drawn to the fact that a considerable part of the solution is devoted to "discussing" the problem in its various phases.

The student's discussion of a problem often shows a more intelligent understanding of financial principles than is shown in the solution alone.

Part I—Problems Dealing with the Form and Character of Securities

Problem I

The Form of Capitalization

The following represents the balance sheet of the Stoneboro Manufacturing Company.

Assets		*Liabilities*	
Plant	$1,568,000	Capital Stock (par $100)	
Patents and Trade-Marks (at cost, properly written down)	768,560	Common	$1,000,000
		Preferred	600,000
Raw Material	165,000	Mortgage Bonds	800,000
Goods in Process	278,000	Debentures	200,000
Finished Goods	73,650	Notes Payable	365,000
Notes Receivable	190,000	Accounts Payable	185,115
Accounts Receivable	76,724		
Cash	22,863		
Deficit	7,318		
	$3,150,115		$3,150,115

(a) What is the capitalization of this company?

(b) What is its capital?

(c) What is its capital stock?

(d) What is the net worth of each share of common stock, provided the preferred stock could be liquidated at par?

(e) The owners of this business decided to exchange the common stock into stock of no par value. What changes should be made in the entries on this balance sheet to make it conform to the new condition?

In discussing this problem it is important to observe the differences in the uses of the two words, capitalization and capital, in economic theory, business, and corporation finance.

Problem II

The Net Worth of Common Stock

The following is the statement of the Merchants Trust Company—member of Federal Reserve System. What is the book value or net worth of its stock?

STATEMENT OF CONDITIONS

October 1, 1920

Assets		*Liabilities*	
United States Bonds.	$306,704.90	Capital.....	$200,000.00
Bonds and Securities	905,033.20	Surplus.....	200,000.00
Loans and Discounts.	2,627,073.33	Undivided Profits...	62,690.32
Bank Building, Vault, and Fixtures.....	90,300.00	Deposits.....	4,209,158.89
Cash on Hand and Due from Banks..	742,737.78		
	$4,671,849.21		$4,671,849.21

Should you say that bank stock would ordinarily sell for more or less than its book value? Give a series of questions that you might ask concerning a bank to ascertain whether the market value of its shares was greater or less than the book value. Would you expect to find the difference between the book value and the market value of the stock of a small country bank greater or less than the difference for the stock of a large New York bank?

Explain your answer.

Problem III

The Coupon Rate on Bonds

The Mercantile Manufacturing Company decided that it would be wise to secure $2,000,000 of new capital in order to liquidate a portion of its unfunded debt. The directors at their meeting of April 3, 1916, decided to issue bonds. A banking house with which the treasurer entered into correspondence offered to buy 6% 20-year first mortgage bonds for 115, 20-year 5% bonds at 98½, or 20-year 4% bonds at 80. The accountants acting for the firm insisted that bond discount or bond premium should be extinguished by equal annual instalments, i.e., without reference to interest on either accumulated reserves or unextinguished premiums. Which offer of the banking house should the corporation accept?

Problem IV

The Issue of Bonds

The Consumers Electric Light Corporation had outstanding in 1913 $765,000 5% mortgage bonds. The company was allowed under the original mortgage to issue additional bonds "for improvements, extensions, etc., at 85% of actual cost, and then only when net earnings applicable to interest were equivalent to 1½ times the interest charges on all bonds outstanding including those to be issued." Construction costs amounted in the preceding year to $43,564. The gross earnings were $312,000 and the total operating expenses $221,000.

What is the amount of new bonds that can be issued?

Problem V

The Issue of Bonds

A corporation has outstanding $1,568,000 first mortgage 6% bonds. These were originally issued under an indenture that provided for the issue of additional bonds to pay for 80% of the cost of new construction, but

only if the net earnings, after depreciation, for the preceding year were at least twice the interest charges on the bonds already issued and those to be issued.

On January 1, 1921, the following income and expense statement was presented to the board of directors covering the business of the preceding year.

Gross Receipts		$608,731
Cost of Operation Including Labor, Materials and Small Repairs	285,760	
Maintenance of Plant, Structures and Distributing System	98,623	
Taxes	24,201	
Depreciation	27,000	
Losses by Fire and Debts Charged Off	3,765	
Improvements and Extensions	68,300	
Interest Charges on Bonds	78,400	
Interest on Floating Debt	5,760	
Balance on Hand	16,922	
	$608,731	$608,731

How many new bonds, if any, can the board of directors authorize?

Problem VI

The Issue of Bonds

A corporation with the following balance sheet and income account proposes to issue some additional first and refunding mortgage bonds. It is provided in the indenture that additional bonds may be issued provided the total bonded debt is not greater than the capital stock; provided the net earnings are at least twice the total interest charges, including that of the bonds to be issued; and provided, finally, the par value of the new bonds be not greater than the capital expenditures. But it was provided in another connection that at least 10% of the total machinery accounts and 4% of the plant accounts must be expended or set aside out of earnings before betterments, replacements, or improvements can be properly charged to capital.

How many new bonds can the corporation issue?

BALANCE SHEET

(Somewhat Simplified)

Assets		*Liabilities*	
Buildings and Structures	$1,875,000	Common Stock	$4,000,000
Machinery	4,658,000	Preferred Stock 7%	3,000,000
Inventories	6,783,000	First Mortgage 6% Bonds	1,500,000
Cash	285,000	Second Mortgage 5% Bonds	1,000,000
		First and Refunding Mortgage 5% Bonds	1,360,000
		Notes, Bills and Accounts Payable	1,568,000
		Surplus	1,173,000
	$13,601,000		$13,601,000

Gross Income for the Year After Deducting Raw Materials, Labor, Salaries		$3,023,000
Repairs and Maintenance	$178,000	
Taxes, Partly Estimated	216,000	
Floating Debt Interest, Discounts	96,000	
Bonds Interest	208,000	
Insurance	21,000	
Losses on Inventory and Bad Debts	16,000	735,000
Net Income Before Depreciation or Dividends		$2,288,000
Depreciation		103,000
Dividends, 7% on Both Classes		490,000
Betterments		784,000
Surplus		911,000

Problem VII

Classification of Bonds

The treasurer of the Old Ladies' Home of Georgetown, Inc., died in 1919. His successor, Warren Taylor, Esq., was appointed in the spring of 1920. Mr. Taylor desired to obtain expert opinion concerning the invest-

ments held by the trustees of the Old Ladies' Home. Accordingly, he prepared a report of these investments with reference to:

(a) The character of security.
(b) The type of enterprise.
(c) Short, medium, or long term.

Below is given the list of securities. Prepare such a report as Mr. Taylor desired.

Atchison, Topeka and Santa Fe Railway general mortgage 4's gold 1995
Great Falls Power Company first mortgage 5's 1940
Bethlehem Steel Company first and refunding mortgage 5's 1942
United States Realty and Improvement debenture 5's 1924
Illinois Central Litchfield division first mortgage 3's 1951
Erie Railroad prior lien 4's 1996
American Telephone and Telegraph Company collateral trust 4's 1929
Chicago Gas Light and Coke Company first mortgage guaranteed 5's 1937
General Electric Company debenture 3½'s 1942
Illinois Central Railroad and Chicago, St. Louis and New Orleans, joint, first and refunding 5's 1963
Baltimore and Ohio, Southwestern division 3½'s 1925
Adams Express Company collateral trust 4's 1948
St. Louis and San Francisco income mortgage 6's 1960
Kanawha and Michigan first mortgage, guaranteed 4's 1990
Manhattan Railway second mortgage 4's 2013
Kansas City Terminal first mortgage 4's 1960
Tennessee Copper Company, convertible debenture 6's 1925
New York and Erie Railroad fifth mortgage 4's 1928
Henderson Bridge Company first mortgage 6's 1931
Louisville and Nashville secured gold notes 7's 1930

Problem VIII

Redemption of Bonds

In 1892 the Hamilton, Morristown and Eastern Railroad issued $3,000,000 6% first mortgage bonds, callable at 105 and due in 1942. In

1903 general interest rates on medium grade railroad bonds had so fallen and the credit of the Hamilton, Morristown and Eastern Railroad had so improved, that the treasurer found it possible to sell long-term (hundred-year) first mortgage 4% bonds at 90.

Determine whether or not it was expedient for the treasurer to redeem the earlier issue of bonds by means of a new issue.

Problem IX

The Issue of Refunding Bonds

The Consolidated Light and Power Company was formed in 1916 as successor, by consolidation, of three small electric and gas companies. These latter had outstanding the following underlying issues:

City Gas Company, first mortgage 6's, 1928, $438,000. Callable at 105, and having a current market price of 102. Approximately $307,000 are held by three local interests who promise to deliver their bonds to the new company for 103 in money, or to refund them into the new 5% bonds, presently to be described, at 80 for the new bonds and 105 for the old bonds. The remaining $131,000 will probably have to be called.

Consumers Electric Light Company, first mortgage 5's, 1941, $600,000. Callable at 101 and having a current market price of 91½. The bankers who originally placed these bonds stand ready to acquire and deliver to the company the entire issue for 97½ in cash.

Merchants Electric Light and Power Company, first and refunding 5's, a second mortgage on the electric central and distributing system, subject to the lien of Consumer's first 5's next above mentioned. Due 1945, $1,400,000 outstanding. Callable at 102½. Current market price 84. The company has an option on $500,000 of these bonds at 85 in cash. There is every reason to believe that at least two-thirds of the remainder of the issue will be exchanged for the new 5% bonds, provided the company offers a bonus of 10% in the new bonds. The remainder will probably have to be called.

Bankers stand ready to buy all or any part of a new issue of $5,000,000, 5% 40-year bonds at 82½, provided the mortgage be drawn so as to stand as a first lien on the entire property of the gas and electric light company.

What is the maximum amount of money the company would receive from the entire issue of new bonds?

Problem X

Guaranteed Bonds

On December 31, 1917, the San Antonio and Arkansas Pass first mortgage 4% bonds were outstanding to the amount of $17,544,000. These bonds were guaranteed principal and interest by the Southern Pacific Company, which held $404,000 in its treasury. For the year 1917 the following is the abbreviated operating account of the San Antonio and Arkansas Pass Railroad.

Gross Earnings	$4,178,191
Operating Expenses	3,517,594
Non-Operating Income	170,910
Taxes	195,103
Rentals	27,283
Interest on Equipment Obligations	14,500
Floating Debt Interest	232,978
Miscellaneous Expenses	1,707

To what extent was the railroad a source of direct profit or a direct burden to the Southern Pacific Company? Does this indicate that the road was necessarily a profitable or unprofitable subsidiary? Explain.

Problem XI

Priority of Interest Claims

The Eastern Valley, Sumpter and Southern Railroad has outstanding the following securities:

Sumpter Division (Main Line), First Mortgage Bonds 6%	$1,000,000
Sumpter Division (Main Line), Second Mortgage Bonds 5%	500,000
First Mortgage Bonds 4%	4,000,000
Debentures 5%	2,000,000
Branch Line First Mortgage Bonds 7%	300,000
General Mortgage Bonds 5%	3,000,000
Income Bonds 6%	1,500,000

First and Refunding Mortgage Bonds (open end issue) 5%	$2,600,000
First Preferred Stock 4%	6,000,000
Second Preferred Stock 4%	2,000,000
Common Stock	10,000,000

Its operating account during the year ending June 30, 1914, was:

Gross Revenue from All Sources	$2,228,000
Operating Expenses, Including Maintenance	1,492,000
Taxes	37,000
Improvements and Betterment	49,000

What capital payments may or should the corporation make?

Problem XII

Income Bonds

The Western Mississippi Railroad had outstanding $3,000,000 prior lien 5% bonds and $3,000,000 cumulative income 6% bonds. The latter were cumulative from January 1, 1917. In 1917 the corporation paid 2.85% on the income bonds. The income and expense account for 1918 stood as follows:

Total Operating Revenues	$1,354,748
Maintenance of Ways and Structures	126,738
Maintenance of Equipment	189,854
Transportation	427,877
Traffic	33,825
General Expenses	44,797
Taxes	84,665
Uncollected Revenue	513
Income from Rentals	16,271
Interest and Dividend from Subsidiary Companies	5,598
Miscellaneous Non-Operating Receipts	1,302
Hire of Equipment, Dr.	7,740
Rentals, Dr.	14,508
New Construction	82,617
Purchase of Ferry-boat	17,016
Insurance	1,871
Stokes Hill Cut Off	31,612

What percentage, if any, should be paid on the income bonds for 1918?

Problem XIII

Equipment Trust Obligations

The Northern Maine and Penobscot Railroad acquires a collection of miscellaneous equipment at a total cost of $2,000,000. It pays 10% of cost price at the time the equipment is delivered. The remainder is obtained through the issue of equipment trust certificates, bearing 5% interest, and maturing in equal semiannual instalments for a period of 10 years. The certificates were sold to bankers at 97½ less ½ point commission. The legal and other expenses attendant upon the issue amounted to $3,800. These expenses, together with the discount, were amortized evenly over the life of the certificates.

What was the total charge, because of this equipment trust, during the eighth year after issue?

Problem XIV

Relative Security of Equipment Obligations

The Southeastern Railroad issued as of January 1, 1914, $4,000,000 equipment trust certificates, bearing 5% interest, based on the purchase of standard steel underframe cars costing $4,500,000. These certificates mature in 10 equal annual instalments. Suppose that the underframe car has a life of 15 years, at the end of which it has a scrap value of 10% of the original cost. Also, that the decline in value of the equipment is regular and uniform throughout the period. What is the relative margin of security, i.e., ratio between par value of security and actual value of property of an equipment certificate of $1,000 par value held by an investor January 2, 1919? Suppose that the cost of such cars increased from January, 1914 to January, 1919, by 118% and suppose the value of the property behind the certificates is determined by the method known as "reproduction new less depreciation," what would be the margin of security to the investor?

Problem XV

Lien of Preferred Stock on Assets

James Edgerly owned about $^4/_5$ of the common stock of the Edgerly Manufacturing Company engaged in the manufacture of brass, bronze, and copper specialties. The company had been a success for over 20 years, during which time Edgerly, himself, had been the executive manager for 18 years, or since the death of his father. On March 10, 1921, Edgerly committed suicide. A committee of the preferred stockholders, after careful study of the situation, decided to liquidate the business. They reported the balance sheet, as of March 1, 1921, as:

Assets		*Liabilities*	
Real Estate, Land, Cost	$100,000	Capital Stock	
Buildings	216,000	Common	$500,000
Machinery	634,000	Preferred, 7%, non-cumulative	750,000
Small Tools and Miscellaneous Equipment	65,000	First Mortgage Bonds, 5%, Callable at 102½	300,000
Raw Material, Cost	492,000	Notes Payable	216,000
Goods in Process	116,000	Accounts Payable	97,000
Finished Goods, Unsold, or Else Held for Cancelled Orders, Cost	221,000	Surplus	193,000
Accounts Receivable	79,000		
Notes Receivable	111,000		
Cash	22,000		
	$2,056,000		$2,056,000

The land on which the factory building stands is sold for about 28% above the cost, but the building itself will have to be torn down and will yield nothing to the shareholders. The machinery has for years been carried on the books at cost, without depreciation. It is sold for junk at a price of about $40,000. About $10,000 is realized from the sale of the small tools.

The crisis in the affairs of the company was brought about by the sudden decline in the price of raw material. About 46% of cost is realized on the raw material account. The goods in process are finished at an expense of $15,000, after which they are sold for about $33,000. The finished

goods, being mostly unmarketable specialties, realize only about 20% of the cost. A loss of 12% is taken on the open accounts. The notes receivable are all endorsed by a commission house, which acquires them immediately at a discount of 2%. In the liquidation of the company the preferred stock has priority over the common.

What will the holder of one preferred share receive as a liquidating dividend?

Problem XVI

The Payment and Funding Preferred Stock Dividends

(This problem involves some knowledge of accounting)

The City Manufacturing Corporation had outstanding, January 1, 1919, $3,000,000 common stock, $3,000,000 7% cumulative preferred stock upon which there had accumulated 63% of unpaid dividends. But during 1919 the corporation, by reason of war conditions, had accumulated a profit and loss surplus, after payment of and reserves for taxes, of $3,763,000. The corporation had no bonded debt. Of this surplus all but $27,300, carried as cash, had been invested in extensions of plant or in increased net assets. To reduce the current assets would disturb the pleasant relations with creditors, and the directors were opposed to increasing the current borrowings at the banks. They wished to declare a 3% dividend on the common stock, which would involve the payment of the accumulated dividends on the preferred. To accomplish this end the preferred stockholders were offered—and the latter accepted—a cash dividend of 23% and the remainder in 6% first mortgage bonds taken at par. To carry out the plan the corporation issued $3,000,000 10-year first mortgage 6% bonds; all not taken by the preferred shareholders were sold to bankers at 90.

Prepare a balance sheet of the City Manufacturing Corporation as of January 1, 1919, creating for the purpose reasonable entries for items not specifically mentioned in the problem. Then, using the same balance sheet as a basis, show the balance sheet of the corporation after the dividends on the two classes of stocks have been paid.

Problem XVII

Issue of Convertible Bonds

The Wilkesboro and Southern Railroad has outstanding $3,000,000 first mortgage 5% bonds; $2,000,000 of preferred stock having non-cumulative 4% dividends and $2,000,000 common stock. Its first mortgage bonds sell for 103; its preferred stock for $66 a share; and its common stock for $48 a share. The earnings warrant a 2% dividend on the common stock, the market price has risen from $13 a share to the present level during the last 15 months.

One million dollars is required for expansion. Bankers offer to buy at 90% $1,500,000 20-year second mortgage 5% bonds, or at par $1,500,000 6% debenture bonds convertible into common stock on the basis of 80. The directors chose the latter alternative. In 3 years the common stock has risen to $92 a share and all the convertible bonds have been converted. Meanwhile the dividend has been increased to 7%.

What is now the greater cost of capital of the second alternative over the first? Had the directors been able to forecast the movement of the common stock at the time the bonds were issued, should they have issued the second mortgage bonds rather than the convertible debentures? Explain your answer.

Problem XVIII

Conversion Ratio

A certain issue of 4% bonds of the Union Pacific Railroad was convertible in the common stock at a ratio of 175%. At one time the common stock was selling at 148 and paying 10%. The bonds were selling at 97. An investor placed $9,700 in the bonds, with the intention of converting them into the stock when it was profitable so to do. Exactly 2 years later the stock, meanwhile paying the same rate of dividends, sold at $175 a share. The investor converted.

How much more profitable would it have been for him to have bought the stock 2 years before? Do not consider interest on interest.

Problem XIX

Conversion Ratios

A certain issue of the 4% bonds of the Erie Railroad is convertible into the common stock at 60. The bonds are acquired at 47.

What is an equivalent, i.e., corresponding price for the common stock?

Problem XX

Conversion Profits

The 4½% bonds of the Baltimore and Ohio Railroad are convertible into the common stock at 110%. Ten thousand dollars par value of the bonds are purchased at 82⅝, the speculator borrowing the money at 5% interest, interest payments being made semiannually. The bonds are held exactly 3 years at which time they are converted. The common stock received is immediately sold at $103 a share.

Compute the speculator's entire profit or loss.

Problem XXI

Conversion Values

A corporation known as the Gas Securities Corporation issued on March 10, 1913, some 6% 1-year notes at 98. Between March 10, and May 10, the notes could be converted into $1,000 preferred stock and $300 par value of common stock. Thereafter, on the tenth of each month, the amount of common stock to be received on conversion was reduced by $10, par value, so that during the last month of the year the notes ran, only $200 of the common stock was given. On August 18, 1913, the preferred stock had a value of $78 a share and the common stock a value of $8 a share.

Did it pay the purchaser of a note to convert?

Part II—The Promotion of Corporations

In the solution of these problems attention should be given particularly to the formulation of the financial plan. Sharp distinction should be made between financial plans of a speculative industrial as compared with an established public utility corporation.

The comment and solution of Problem XXII, the Arrabassett Power Company, is given for illustrative purposes. Attention of the students should be drawn especially to the difference between the financial plan of the Arrabassett Power Company and that of a small industrial such as that represented by the first three or four problems of the book.

Problem XXII

The Arrabassett Power Company

In 1912 James Stetson, an electrical engineer, developed a water-power on the Arrabassett River 14½ miles above Galesboro, a city of 27,000 inhabitants. He acquired, for a cash payment of $316,000, the local distributing system of Galesboro. The hydroelectric development alone cost $617,000 and the transmission line, substation to Galesboro, $46,000. This total money cost was met by advances from a syndicate headed by William Sampson and Company, under an agreement by which the Sampson firm obligated themselves to sell bonds and preferred stock of the enterprise (after it had been in operation a year) so as to yield enough money to reimburse the syndicate for its cash advances together with 6% inter-

est and 2% commission. The common stock was to be divided so that ⅛ went to Stetson, ⅛ to William Sampson and Company, and ⅛ to the individual underwriters. The Sampson firm were underwriting members of their syndicate to the extent of a 4/10 interest. The developments and physical connection with Galesboro were completed November 8, 1912. The calendar year of 1913 showed the following earning statement of the hydroelectric development and the distributing system at Galesboro.

Gross Earnings	$339,000
Operating Expenses (including taxes)	162,000
	$177,000

On the basis of this showing the Galesboro Electric Power Company was organized with the following capitalization:

First Mortgage 30-year, Sinking Fund 5% Bonds (closed issue, callable at 105)	$1,000,000
6% Preferred Stock ($500,000 authorized) Issued	250,000
Common Stock	1,500,000

William Sampson and Company sold the entire issue of bonds to M. U. Harlow and Company for 88½, who retailed them to investors for 93½. They sold the issue of preferred stock to a group of 6 small banking houses for 90, who, in turn, sold the stock to small investors for 98½. The two issues, therefore, netted the company $1,110,000. The entire advances of the syndicate, including interest, expenses, and commissions amounted to $1,082,000. The balance of $28,000 was returned to the company's treasury; the common stock was distributed in accordance with the original syndicate agreement.

The business prospered. In the early spring of 1916, Stetson acquired options on the distributing systems in 6 neighboring towns and cities, with the intention of promoting a large operating company deriving its power from an enlargement of the original Arrabassett development. Four of these towns lay within 4 miles of the power station of Galesboro; the two cities were on opposite sides of a river 26 miles away, in the opposite direction from Galesboro.

The following few facts are pertinent:

	Galesboro Electric Power Company	Gardner Electric Company	Belgrade Electric Light Company	Clifton Electric Company	Boxboro Electric Company	Sumpter Electric Light Company	Fort Riley
Population Served....	30,000	4,000	1,000	3,500	900	16,000	12,000
Number of Meters...	2,817	160	85	287	46	982	312
Condition of Distributing System.....	Good	Bad	Good	Fair	Poor	Fair	Poor
Amount to be Spent Immediately for Betterments.....	None	$28,000	$2,000	$16,000	$21,000	$38,000	$52,000
Load Factor.....	Good	Poor	Poor	Poor	Poor, Twilight to Midnight	Fair	Poor
Local Management...	Good	Inefficient	Fair	Good	Poor	Fair	Poor
Nature of Population.	Small Industries	Farming Center	Village with Creamery	County Seat, Retired Farmers	Country Village	County Seat Manufacturing	Wood Working Industry

Operating Date: (Even 000)	Galesboro	Gardner	Belgrade	Clifton	Boxboro	Sumpter	Fort Riley
Gross Earnings Average 3 Preceding Years	$ 352,800	$ 31,300	$ 11,600	$ 46,400	$ 4,700	$116,300	$ 37,000
Year 1915	364,600	32,700	12,900	48,100	4,100	121,500	31,900
Net after Taxes Average 3 Years	189,300	9,300	4,700	20,300	1,200	39,100	7,600
Year 1915	197,900	9,100	4,800	23,000	900	42,700	2,800
Capitalization:							
Bonds	$1,000,000 (5's)	$200,000 (5's)	$ 92,000 (4's)	$250,000 (5's)	.....	$500,000 (4's)	$100,000 (5's)
Preferred Stock	400,000 (6%)	.....	.....	100,000 (6%)	.....	.....	.....
Common Stock	1,500,000	200,000	100,000	100,000	81,000	500,000	300,000
Option Price	.....	Bonds at 61% and stock thrown in	$8 a share for all of common stock	$71 a share for the preferred stock; $31 a share for common	$15,000 for property free from debts	$20 a share for the stock	In hands of receiver. Total cost about $37,000

Stetson estimates that improvements at the power-station, in order to furnish ample power, will require $280,000. A new transmission line to Sumpter and Fort Riley will cost, with substation, $118,000. Subordinate lines from the power-station or from points on the Galesboro line to reach the four small towns will cost $18,000. As soon as the connections are completed from the 6 new towns and cities with the power-house the previous operating ratio will be cut 12% immediately. This will, however, entail an additional expense of $400 in the operation of the power-house, the costs of which are included in the statement of the Galesboro Electric Power Company. It will require until September 1, 1916, to complete the improvements at the power development and to build the necessary connecting lines.

Stetson further estimates that if the expenditures on the respective distributing systems for the 6 new towns and cities are made, there will be an increase of at least $42,000 in gross earnings during the year immediately following the improvements. Furthermore, when there has been this increase in gross revenue the composite operating ratio, including Galesboro, should show a further decline of 2%. Without expenditure for important betterments, Galesboro will show a rate of increase of gross of about the average for the last 3 years.

Prepare a financial plan for the promotion of the Arrabassett Power Company which shall bring together into a single operating company the seven properties.

Arrabassett Power Company

Comment and Solution

General Comment. An inspection of the data of the problem shows the following important pertinent facts:

1. Control. (a) Through the distribution of the common stock of the Galesboro Electric Power Company, Stetson receives $500,000 or a third, William Sampson and Company receives $700,000. The two interests, together, therefore, control the equity of this property. (b) The control of the new Arrabassett Power Company will rest with the same interests as the Galesboro Electric Power Company; the latter will form the nucleus of the new power company.

2. Past earnings. Considering the available data the aggregate earnings of the 7 properties to be combined are:

	Average of Preceding 3 Years	Preceding Year (1915)
Gross Earnings..	$600,100	$615,800
Net Earnings...	271,500	281,200

3. Money requirements. Since Stetson and the Sampson firm control most of the common stock of the Galesboro Electric Power Company, the problem will be to finance the purchase of the other 6 properties. This will require at a minimum $384,000 in money. This leaves outstanding $842,000 par value of bonds, not considering the Galesboro securities.

In addition $416,000 will be required before September 1, 1916, for making the connections. Likewise, $157,000 must be spent immediately for improvements in the 6 towns. In case the promotion should be planned so as to extinguish or refund the underlying bonds, cash would have to be provided in addition for the acquisition of $1,000,000 Galesboro bonds and $842,000 of bonds of other corporations.

4. Future earnings. On the presumption of the general accuracy of the estimates we may infer the following facts:

(a) The operating ratio of the 6 towns (not including Galesboro) in 1915 was 67%. Connections with the Galesboro power-house will reduce this to 55%. These connections will be finished September 1, 1916. They will entail an increase of $400 in the Galesboro operating expenses.

(b) The first full year for which the estimates are applicable is the year September 1, 1916, to September 1, 1917.

(c) There will be an increase of $42,000 in the gross earnings of the 6 towns (not including Galesboro) for the year September 1, 1916, to September 1, 1917.

(d) The rate of increase of gross for Galesboro alone will be continued through the year ending September 1, 1917. This rate of increase is to be computed as follows:

Gross for Galesboro Calendar Year 1913.....	$339,000
Gross for Galesboro " " 1914.....	354,800[1]
Gross for Galesboro " " 1915.....	364,600
Rate of Increase 1914 over 1913.....	$15,800 or 4.7%
" " " 1915 " 1914.....	9,800 or 2.8%
Average Rate of Increase.....	3.7%

[1] Computed as follows: Let x represent 1914. $\frac{\$339.000 + x + 364,600}{3} = \$352,800.$

During the calendar year 1916, Galesboro would have a gross of approximately $378,100. During the calendar year 1917, the gross earnings would be $392,100. By dead reckoning the gross earnings for the year from September 1, 1916, to September 1, 1917 would be roughly $387,400.

(e) The operating ratio for Galesboro alone would remain constant, except that the operating expenses would be increased by $400 due to the expansion.

(f) The operating ratio for the entire properties, all seven, will be decreased by 2%.

On the basis of these facts we may proceed to estimate the gross and net earnings of the entire promotion, for the year ending September 1, 1917, as follows:

	Gross
Galesboro	$387,400
Six Towns	293,200
Total	$680,600

The estimate of the operating expenses and net earnings is much more complicated. The problem is not clear as to whether the reduction of 12% in the operating ratio for the 6 towns applies before there has been an increase of $42,000 due to internal improvements, or after. The problem seems to imply that this reduction is quite independent of the reduction of 2% in operating ratio for the entire properties following the total increase of gross earnings. We will assume that the internal improvements are all made before September 1, 1916, since the wording is "amount to be spent immediately for betterments." Consequently the operating expenses for the 6 towns alone would, for the year from September 1, 1916, to September 1, 1917, be 55% of $293,200 ($251,200 gross for 1915 plus $42,000 additional due to internal betterments) or approximately $161,300. This leaves net earnings of $131,900 for the 6 towns alone, for the year in question.

The operating ratio for Galesboro for 1915 was 46% approximately. The operating expenses for the year from September 1, 1916, to September 1, 1917, would be $178,200—without considering the additional $400. This would increase the operating expenses to $179,600. It would leave net earnings for Galesboro of $210,100. Putting these figures together (and still omitting from consideration the general reduction of 2% in operating expenses) we have:

	Gross	Operating Expenses	Net
Galesboro	$387,400	$178,600	$208,800
Six Towns	293,200	161,300	131,900
Totals	$680,600	$339,900	$340,700

This represents an operating ratio of 50%. There will be a reduction of 2% for the entire consolidated property—48%. This will bring about the following estimated statement of the entire consolidation for the year from September 1, 1916, to September 1, 1917:

Gross Earnings	$680,600
Operating Expenses	326,700
Net Earnings	$353,900

We may now proceed to the discussion of the financial plan of the new consolidation. The bankers have before them 3 possible general plans, subject to almost an infinite number of modifications.

1. Advance, either themselves or through a syndicate, enough money to carry out the promotion. Hold the securities until the estimated earnings are actually realized.
2. Pay off all the bonds and create an entirely new financial plan. Enough of these new securities would then be sold to furnish the money to pay the bonds and make the improvements.
3. Form a holding company which would own only the equities in the 7 subsidiaries. All the underlying bonds, so far as possible, and the preferred stock of the Galesboro Electric Power Company would remain outstanding. Holding company bonds and stocks would be sold to obtain money for the minimum cash requirements.

A comparison of these general plans shows that the first involves the greatest risk to the bankers. It would bring, however, in case the estimated earnings were actually realized, the bankers and presumably the promoter, the greatest profit. The second plan would involve the largest immediate cash requirement, the third plan the least cash requirement.

The spring of 1916 afforded an excellent market for securities. High grade public utility bonds commanded a 4.80% market, good grade a 5.10% market, medium grade a 5.45% market. Bankers would recognize

this. They would wish to take advantage of it. They would therefore discard the first plan of a carrying syndicate.

The execution of either of the second plans would involve the immediate sale of securities. These securities would be sold on the basis of past earnings and future prospects. Let us consider exactly what is the outlook for new securities on the basis of past earnings only.

Provided the Galesboro, Belgrade, Clifton and Sumpter bonds are not paid or refunded, they will require a fixed charge of $86,180 a year, to which must be added the preferred stock dividend on the Galesboro 6% preferred stock, $24,000, making $110,180 of fixed and contingent charges ahead of any charges to be created in paying for the properties and improvements. The properties and improvements will require $957,000, aside from the underlying securities mentioned in the preceding sentence. Granting, for the purposes of "trying out" a plan, that this money will cost the new company 6%, the added charges are $57,420, making a total charge of $167,600, to compare with actual net earnings of $281,200 and prospective earnings of $353,900. This was not, even in 1916, a particularly strong showing upon which to issue definite securities. It could be used, however, provided the cash to be raised was small in amount and the bonds sold to obtain the cash secured by a first mortgage—without prior lien—on the entire property.

The Galesboro bonds were stronger than any bonds likely to be issued by the consolidated company. They must be either paid off or exchanged into new securities on a very favorable basis. This applies with less force to the Galesboro preferred stock.

The Belgrade and Sumpter bonds, yielding only 4% and representing unsubstantial liens on small properties, could surely be exchanged into new bonds. Owing to the narrow margin of earnings available, the Clifton bonds could be exchanged on about an even basis. A small premium or discount, either way, on the refunding of these three small bond issues would not be of much importance in determining the general financial plan.

On the basis of past earnings only, $2,800,000 of 5% first mortgage bonds could be issued, since bonds of a public utility such as this should show past earnings at least twice interest charges. This would absorb $140,000. Preferred stock to such an amount could be issued that the dividend would not absorb more than a third to two fifths of the remaining earnings. This would permit the issue of $750,000, 7% preferred stock. The amount of common stock is unimportant, except to the holders of the

$300,000 common stock of Galesboro not held by Stetson and Simpson. An equitable adjustment of this will be discussed presently.

We have therefore the following senior securities to use in the promotion:

First Mortgage 20-Year 5% Bonds.....	$2,800,000
Preferred Stock 7%.....	750,000

An offer is now made to the holders of the $1,000,000 Galesboro bonds to exchange them, par for par, into the new bonds together with a cash bonus of 10% or $100 a bond. This would enable the holders to mark their bonds down to 83½. A medium grade 5% public utility bond, showing net earnings of twice interest charges, was worth about 88 in the spring of 1916. We will assume, therefore, that the proposition is accepted by some 95% of the bondholders. The remaining 5% of bonds are called at 105 and the Galesboro mortgage is cancelled.

The holders of the Belgrade, Clifton and Sumpter bonds are offered par in new bonds. The offer is accepted, with the exception of the holders of $6,000 par value of bonds. This amount of money is deposited with the respective trustees and then the mortgages are cancelled.

These refunding operations absorb $1,786,000 of new bonds, and cost as follows:

Bonus to $950,000 Galesboro Bonds.....	$95,000
Calling $50,000 Galesboro Bonds.....	52,500
Deposit on Small Bond Issues.....	6,000
	$153,500

As stated earlier the properties and the contemplated improvements will cost $957,000 in money (aside from the bonds to be refunded and the Galesboro common and preferred stocks). With the money required for the bond refunding, there must be raised $1,110,500.

The preferred stockholders of the Galesboro Company are offered new 7% preferred stock in exchange for their old 6% preferred stock. The bankers who placed the Galesboro preferred stock are given 5% bonus in new preferred stock for effecting the exchange. Simpson and Co. will purchase this bonus at 80%, so that the bankers can receive a cash commission of 4%. All the preferred stock is exchanged. It absorbs $262,500 of the preferred stock. There remains, therefore, $1,014,000 in new bonds and $487,500 in new preferred stock with which to raise $1,110,-

500 in money. The bonds, the entire remainder, are sold to M. U. Harlow and Company, who bought the original Galesboro bonds, for 85%. This sale gave the promoters $861,900. The promoters then sold $300,000 of the preferred stock for 87%. This yielded the company $261,000. The total money realized from the sale of securities was, therefore, $1,122,900, ample to meet the actual money requirements. The unsold preferred stock passed into the treasury of the new company.

Some nominal amount of common stock was issued. This was determined by the exigencies of the situation. Suppose an issue of $3,000,000 was used. On the basis of the past earnings this issue of common stock showed, after fixed and contingent charges, about 3%. The common stock of the Galesboro Company showed earnings of about 8%. The holders of the $300,000 par value, just one fifth interest of Galesboro common stock not held by Stetson and the Simpson firm were offered 2 shares of new common stock for one share of Galesboro, a one fifth interest in the new company. The offer was unanimously accepted. This required the issue of $600,000 new common stock. The remaining $2,400,000 was divided equally between Stetson and William Sampson and Company.

In this particular solution of the problem it is assumed that a 5% first mortgage, 20-year, public utility bond could be sold to the public at about 90. This was true in the spring of 1916. It certainly was not in the spring of 1921. If, therefore, no available market exists for the bonds, some other means must be found of furnishing the proportion of the cash requirement that, had a market existed, would have been realized from the sale of the bonds and preferred stock.

If interest rates are such that new first mortgage bonds cannot be sold except on an 8% or 8½% basis, as in the spring of 1921, some other solution of the problem would have to be adopted.

The course adopted in such a case would depend on the confidence of the promoters in their estimate of the earnings for the year after the improvements were completed, in this case the year ending September 1, 1917, and upon their belief regarding the future course of interest rates. Assuming that they had implicit confidence in their estimates and believed interest rates were falling, the promoters might wisely secure the necessary money by the issue of 7% 2-year notes at 98. The best course in such a case would probably be to secure the refunding of all the underlying bonds, in the manner described in the solution of the problem, and then to hold the remaining $1,014,000 bonds in the treasury of the new corporation. The promoter would then issue $1,200,000 8% second mortgage 2-year notes, junior to the bonds, but senior to the preferred stock. At the end of the

2 years, provided the promoters' estimates of earnings were actually realized, the treasury bonds could be sold to meet part or all the notes. Meantime, too, the increased earnings will have made easier the sale of the preferred stock held in the treasury.

In case the promoters have not implicit confidence in their prediction of earnings, and if they do not care to assume the risk of the issue of short-term notes, then the "block" plan should be used. In such a case the amount of the issue of the common stock should be further increased so that an apparently liberal bonus of common stock may be given away without jeopardizing the control of the company by the promoters and bankers.

Problem XXIII

Promotion of a Company for Exploiting a Small Patented Device

A man by the name of Watkins invented a small device to be carried in the pocket for sharpening pencils. It could be manufactured for 6 cents, if ordered in lots of 1,000. The inventor wanted a half interest in the business, and would surrender the other half in return for sufficient capital to exploit the patent. There were no orders in sight and the inventor had no idea how to market his invention. A private brass manufacturer became interested in the invention and offered to furnish $5,000 capital at the outset, and $10,000 more within a year, provided the initial sales indicated that the public would buy the device.

Prepare a plan for the promotion of the "Little Wonder Pencil Sharpener Company."

Problem XXIV

The Problem of the Promoter

Amos Jenkins brought to Edward Riley and Company, investment bankers, the proposition of financing a new shoe factory, of which Jenkins was to act as general manager having executive charge of the new business. Edward Riley and Company obtained a report on Jenkins from a mercan-

tile agency, as a preliminary step. The report stated that Jenkins was a very able shoe manufacturer, particularly skillful in the purchase of raw materials. He had been accused by one employer of securing secret rebates from a large leather house and had immediately withdrawn without attempting to disprove the accusation. He had been refused by the First National Bank a line of credit in case he should build a shoe factory of his own. He had been sued by his father-in-law for converting to his own use —for margins on stock exchange transactions—12 bonds owned by his sister-in-law. The case had been settled out of court. He had a "poor pay" reputation for meeting his small living bills. Edward Riley and Company were convinced that the project was sound economically.

How could they safeguard themselves against such a man as the mercantile agency described?

Problem XXV

Promotion of a Specialty Corporation

An inventor has secured patents on a lens consisting of a series of glass prisms, for throwing the light from automobile headlights downward. The headlights of machines equipped with the device conform with certain state laws. A promoter is about to organize a company, for the exploitation of the device. He has contracted to pay the inventor $10,000 in cash for the patent rights which are to be assigned to the new company subject to the lien of the purchase money. $5,000 is to be paid within 60 days and the balance within 90 days.

The glass for the lens can be purchased from a Pennsylvania glass works for 11 cents a pair. The promoter has leased a small shop for assembling and packing the device at $100 a month, which includes power and heat. The labor and other costs will be 26 cents on an output of 500 a week and 18 cents or less on an output of over 1,000 per week. An automobile accessory jobbing house has signed a contract to purchase 300 pairs of lenses a week at 85 cents for one year, provided the company expend $10,000 in advertising during the first year. To equip the assembling plant $6,000 is required. The promoter, on behalf of the new company, has agreed with the accessory jobbing house that the lenses will be sold to garages for $1.25 a pair, less 2% cash, and that the retail selling price will be fixed at $2.00. The promoter plans to allow salesmen a gross com-

mission of 20% on all sales to garages. A revolving fund of $10,000 is required to place salesmen on the road. For organization expenses $1,000 is required.

Prepare a financial plan for the promotion.

Problem XXVI

Promotion of a Small Shoe Factory

A small shoe factory, located at Lynn, Massachusetts, manufacturing medium grade McKay sewed ladies' shoes has been quite successful. The present owner, Jeremiah Johnson by name, began with a small capital, only $11,400 at the start of the enterprise 2 years before. He has drawn out of the business only $2,300 for his own account during the 2 years.

At the time in question auditors report the following situation: The business is conducted in an old wooden building for the use of which the proprietor pays $100 a month. $2,730 has been invested in shoe machinery and $3,010 in power transmission machinery and equipment. The rest of the machinery is under lease from the United Shoe Machinery Company. The business has leather, findings, goods in process, and finished goods under order, subject to cancellation, of $52,640. It has accounts receivable of $39,640, on which it has borrowed up to 70%. It has discounted customers' notes to the amount of $17,300. It has cash of $2,780 and owes merchandise creditors $31,810 and banks $8,500 on its own paper.

Johnson is an able manager. One of the banks, with whom he has dealings, has introduced him to a capitalist who is willing to put $50,000 into his business, provided it be incorporated.

Prepare a financial plan fair to both Johnson and the capitalist.

Problem XXVII

Promotion Under the Auspices of the Local Board of Trade

The board of trade of a medium-size city in western Pennsylvania wished to attract an industry to the city that employed female labor. There were large steel mills that gave employment to men.

A silk manufacturer, Engalls by name, entered into correspondence with the secretary of the board of trade with a view of erecting a silk mill. The board of trade offered to secure exemption from taxation for a period of 6 years, to donate a factory site of 4 acres and to secure subscriptions to $100,000 of the preferred stock of the silk mill provided the total issue of preferred stock did not exceed one-half the total cost of the mill and the net quick assets. The mill, built and equipped, would cost $500,000. At least $200,000 of net quick assets would be required.

Prepare a financial plan such that the promoter may accept the subscriptions of the board of trade and also receive outside capital from investors and banks.

Problem XXVIII

Promotion of a Jewelry Business

Jones, Smith and Brown, small manufacturing jewelers at Attleboro, Massachusetts, propose to consolidate their businesses, as of January, 1921.

Jones conducts his business in the top story of a brick building. He has $4,700 of material and manufactured goods. He is old and wishes to retire. He owes nothing, and has done business entirely with a certain jobbing house which has paid him cash on delivery, so that he has no outstanding accounts. He is willing to take stock in the new company, provided it involves no responsibility and has a maximum of safety.

Smith is a young man, ambitious and thought well of by the banks. He does a mail-order business with department and mail-order houses mostly outside of New England. Last year his total gross sales amounted to $128,000 of which $16,400 remain as net profits after the payment of all overhead expenses and the setting aside of reasonable reserves. On January 1, 1921, he is carrying a stock of materials and goods amounting to $21,380 and has $14,728 in accounts receivable. He owes one bank $1,000 on $1,500 of Liberty bonds borrowed from his sister. He has a cash balance in another bank of $2,980. He has no merchandise debts.

Brown has an old established specialty business for the manufacture of gold washed chains. He wants to be relieved of responsibility, but does not want to retire. In brief his balance sheet is:

Assets		*Liabilities*	
Plant, a Small Modern Brick Building	$12,000	Bank Loans	$7,200
Machinery	7,000	Surplus	33,800
Material and Finished Goods	8,000		
Accounts	11,000		
Cash	3,000		
	$41,000		$41,000

He made $27,000 the year before; $20,000 he drew out.

Prepare a plan of consolidation.

Problem XXIX

Promotion of a Water Company

Certain citizens of the small town of Dublin in South Carolina decide to organize a private water company. The land about a small lake, 6 miles above Dublin is acquired at a cost of $11,000. From this lake water is to be distributed to the town by gravity. A contractor in Charleston offers to put in the water system, including 21 fire hydrants for $130,000. This does not include the consumers' services. The town agrees to pay $100 a year for each fire hydrant rental. Eight hundred men agree to connect their houses and purchase water of the company at an average yearly rate of $12.50. One factory will be supplied with water on an annual rate of $700. Engineers estimate the annual operating expenses, including repairs, at $2,900 and depreciation at $2,700. The citizens will subscribe to the stock of the company up to $60,000.

Prepare a financial plan on the basis of which investment bankers in Richmond will care to take over the promotion of the company.

Problem XXX

Promotion of a Small Water Gas Company

A gas engineer bought a summer home in the outskirts of a small city in New Hampshire. He became interested in promoting a company to

supply gas, and solicited help from the local board of trade. The gas house, including a U. G. I. set, purifiers, etc., would cost $21,000. The laying of the mains would average about $1 a foot. It was planned to lay only 6 miles of main to start with, on which there were promises of 618 services. The gas holders and miscellaneous expenses would amout to $11,000. It would cost for coal (less by-products), oil, and labor about 85 cents a thousand feet of gas, delivered at the holder. The customers would average a consumption of about 22,000 feet of gas, each, per year. The price to the consumer would be $1.65 per thousand feet. The depreciation would be $2,000 a year. Office expenses would amount to $900. A working manager's salary would be $1,800 a year, and the miscellaneous expenses $900. Repairs to mains and general maintenance of the distributing system would amount to approximately $1,300. The promotor agreed to remain as consulting engineer provided he be given a majority of the common stock of the new company, all the money for which was to be raised by public subscription and to be represented by securities, superior in lien on assets and earnings, to the common stock.

Prepare a financial plan of the promotion.

Problem XXXI

Promotion of a Combination of Small Tanneries

Three small tanneries located in Peabody, Massachusetts, each made a great deal of money during the Great War. This was withdrawn by the proprietors at the end of each year. But on January 1, 1921 each of the proprietors found that he had sustained considerable losses during the preceding year. These losses were due to the rapid decrease in the demand for upper leathers and to the very rapid decline in the market of hides and leather. This fact of the severe losses was not generally known, although the bank from which one of the tanners had increased his borrowings during the latter part of the year had asked to have the books of the tannery audited—a request never before made.

The following represented the balance sheets (made uniform for purposes of comparison) of the 3 tanneries as of January 1, 1920 and January 1, 1921 (even thousands):

AMOS SAMPSON
(Established 1890)

Assets	1920	1921	*Liabilities*	1920	1921
Buildings.....	$100,000	$100,000	Accounts Payable.....	$172,000	$ 97,000
Machinery....	65,000	60,000	Notes Payable.	250,000	293,000
Hides, Current Market.....	174,000	84,000	Surplus.....	94,000	
Hides in Process.....	29,000	3,000			
Finished Leather	3,000	27,000			
Notes and Accounts Receivable....	110,000	92,000			
Cash.....	35,000	6,000			
Deficit.....		18,000			
	$516,000	$390,000		$516,000	$390,000

EDWARD DEXTER AND COMPANY
(Established 1856)

Assets	1920	1921	*Liabilities*	1920	1921
Buildings.....	$55,000	$55,000	Capital Stock..	$50,000	$50,000
Machinery....	72,000	70,000	Accounts Payable.....	82,000	52,000
Hides, Market Value.....	92,000	21,000	Notes Payable.	140,000	120,000
Hides in Process.....	32,000	13,000	Surplus.....	83,000	18,000
Finished Leather	26,000	39,000			
Notes and Accounts.....	71,000	33,000			
Cash.....	7,000	9,000			
	$355,000	$240,000		$355,000	$240,000

TYLER AND SMALL
(Established 1900)

Assets			*Liabilities*		
	1920	1921		1920	1921
Buildings.....	$ 200,000	$200,000	Capital Stock..	$ 500,000	$500,000
Machinery.....	318,000	302,000	Account Payable.....	165,000	216,000
Hides, Market Value.....	178,000	98,000	Notes Payable..	340,000	200,000
Hides in Process.....	71,000	4,000	Surplus.....	8,000	
Finished Leather	83,000	101,000			
Notes and Accounts Receivable.....	147,000	111,000			
Cash.....	16,000	23,000			
Deficit.....		77,000			
	$1,013,000	$916,000		$1,013,000	$916,000

Sampson has offered to turn over his business with its going organization, to the other proprietors, provided they assume his liabilities. The assets, as of January 1, 1921, for all the tanneries have been marked down to the low current market values. The replacement cost, less depreciation, for the buildings and machinery accounts of all 3 tanneries is at least 50% above the amounts at which they are carried. There are approximately $200,000 of accounts payable of the 3 together that must be paid within the next 3 months; the rest of the accounts will be carried. The bank loans will have to be reduced by at least $250,000 or else some arrangement made with the banks for funding a portion of the debt. Fully 80% of the receivables are represented by shoe paper which is likely to be show.

Prepare a plan for the promotion of a new corporation to absorb the 3 tanneries and rehabilitate their weakened credit.

Problem XXXII

Promotion of the Georgia Southern Railway

A certain region is served only by one of the 3 great North-South railway systems of the South. The cotton planters wanted to introduce

competition. Accordingly one of them went to the chairman of the board of directors of another of the large systems known as the Northern Railway, and suggested that he build a branch line into the region. For various reasons it was impractical for the Northern Railway to enter the competitive field. Nevertheless the chairman of the Northern Railway offered to use his best efforts to assist the planters to build a line of their own from Geraky, the junction point on the Northern Railway. He made the following offer:

The Northern Railway would execute a traffic agreement with the new road, which will be called hereafter the Georgia Southern Railway, for an interchange of traffic by which the Georgia Southern would receive 40% on all traffic from stations on its line, the latter agreeing to deliver all traffic for points beyond to the Northern Railway at Geraky. On his return the planter ascertained the following facts: The branch line would be approximately 96 miles in length. It would reach one city, Sanderson by name, of 9,000 inhabitants. The gross freight charges on all the cotton shipped out of a belt extending 10 miles on either side of the proposed road amounted during the previous year to $516,000. The freight receipts from other shipments amounted to $187,000. Owing to the feeling against the other road it was believed that the Georgia Southern would obtain at least ⅔ of all the outgoing shipments from the region.

Planters along the proposed line offered to donate the right of way without charge. Land for a yard in Sanderson would cost $1,700. The board of trade of the city, however, agreed to secure subscriptions to the new road amounting to at least $80,000 in money, to be invested in the securities of the new road. Cotton planters along the line and merchants in the hamlets traversed agreed to provide at least $136,000 under the same conditions. The chief engineer of the Northern Railway, who had been delegated by the chairman to consult with the planters, estimated that the road could be graded for $54,000 and that the labor in laying the track, sidings and yards would amount to $116,000, provided the planters would agree to provide sufficient laborers at the then prevailing wages. He had been authorized by the superintendent of ways and structures, with the approval of the chairman of the Northern Railway, to offer to sell the planters 70 pound relay rails at $16.80 per ton and to provide second-hand cross ties at 27 cents a piece. The station, warehouse and freight house at Sanderson would cost $62,000. Stations at the hamlets would cost $41,000. Switching facilities at Geraky would be provided by the Northern Railway; switches, signals, frogs, plates, spikes, etc., would cost $11,000. Options on 2 second-hand locomotives were obtained for $19,500 each; also

4 second-hand passenger cars at $3,200. The chief engineer of the Northern Railway offered to put the cars in good working condition for $1,500. Freight cars and other equipment would be rented. Incidentals, not specifically mentioned, were estimated to reach not over $50,000.

Prepare a plan for the promotion of the Georgia Southern Railway.

Problem XXXIII

The Rehabilitation of an Antiquated Electric Enterprise

A promoter engineer in Philadelphia heard of an electric situation in West Virginia which the owner had offered to sell. He investigated it and found the following facts:

There was an old steam plant, so antiquated and inefficient that, in spite of the fact that coal was costing only $1.45 a ton at the plant, the generated current was costing the company 4.62 cents per k.w.h. at the switchboard. The annual output was about 780,000 k.w.h., with a very poor load factor. The entire plant would have to be dismantled and a new plant built at another site. This would cost at least $130,000 provided the plant was constructed so as to be efficient for the present business and to allow for the available new business. There was one factory operating on a 9-hour shift, and 2 mills both operating on 2 12-hour shifts. These 3 agreed to buy their power of the company provided the cost would not exceed 2.5 cents per k.w.h. and provided the company, through the construction of a new plant, would place itself in readiness to furnish adequate and dependable service.

Owing to the efficiency of the new plant, and provided the 3 large customers were connected, the total annual output would be increased to approximately 1,200,000 k.w.h., and the load factor much improved. Under these conditions the switchboard cost could be reduced to 2.2 cents provided coal remained at the same price. This estimate was based on the sale of 360,000 k.w.h. to the 3 large new customers at 2.5 cents and an increase in the ordinary business of 7½% k.w.h. output. Parts of the distributing system would have to be immediately rebuilt at a cost of $32,000. The financial statement for the preceding year was as follows:

Gross Earnings, less Discounts	$56,374
Operating Expenses, Including Salaries, Maintenance, and Repairs (no depreciation reserves had been set aside for at least 5 years)	44,719
Taxes	518
Net Earnings	11,137

The owner required $225,000 for the property, for which price he agreed to deliver the rights, franchises and physical property free from debts.

The future possibilities of the city and its prospective industrial importance was such that the promoter remarked to friends that he would have paid the price for the "situation" or the mere right to do business even if there were no established plant and business. He had no money of his own.

Prepare a financial plan by which outside investment bankers could undertake to supply the money requisite for the promotion.

Problem XXXIV

Relative Advantage of Financial Plans

Bates and Company propose one of 2 financial plans to a promoter of an electric power development. Which is preferable from the point of view of the promoter? Which from the point of view of the permanent welfare of the enterprise?

Total amount of money to be raised, $2,000,000.

Plan A

Bonds, 30-year 6%	$1,600,000
Preferred Stock, 7%	800,000
Common Stock	3,000,000

The bankers will purchase the securities in blocks

$1,000 in Bonds
500 in Preferred Stock } for $1,250
750 in Common Stock

Of the $1,800,000 par value of common stock remaining the promoter will take half and the bankers half.

Plan B

Bonds, 30-year 7%..	$1,200,000	bought by bankers at 90.....	$1,080,000
Preferred Stock 8%.	1,000,000	bought by bankers at 70.....	700,000
Common Stock.....	4,000,000	of which $2,200,000 is bought by bankers at $10 a share....	220,000

The remainder of this goes to the promoter.

Problem XXXV

The Promotion of the Cascade Power Company

The Tompkins Falls Power Company was promoted in 1913 and its hydroelectric development at Tompkins Falls on the Ocmulgee River was finished in 1915. It was successful from the first. It was found possible to develop considerably more electric energy than could be profitably sold in the immediate environs. Twenty-seven miles away were 4 small electric light companies, located at Burleyville, McGregor, Milford, and Adams Center.

Milford, the largest, was geographically the center of the group and the other 3 were all located within 3 miles of Milford. Burleyville had a large chair factory and was connected by a small unprofitable electric railway with the center of Milford. Each town had its separate steam electric generating plant and the Milford and Burleyville Railway Company also had its own steam plant. The management of the Tompkins Falls Power Company proposed to acquire the 4 electric companies (but not the street railway) and to form the Cascade Power Company, the latter to acquire all the property previously owned by the Tompkins Falls Power Company and the 4 distributing companies. Each of these has been reasonably successful, although increasing costs of coal have diminished the net profits of the 4 distributing companies. Great economies are therefore expected to result from closing the separate steam generating stations and connecting all the distributing systems with the hydroelectric company.

The following represents the capitalization of the 5 companies just before the organization of the Cascade Power Company:

	Tompkins Falls	Burleyville	McGregor	Milford	Adams Center
Bonds	$2,000,000 5's	$160,000 6's	$ 450,000 5's	$1,000,000 5's	None
Preferred Stock	600,000 n.c. 6%	None	None	500,000 c. 7%	None
Common Stock	3,000,000	250,000	1,000,000	00,000	$60,000

Earnings (Even Thousands) Average 5 Years	Tompkins Falls	Burleyville	McGregor	Milford	Adams Center
Gross	$583,000	$28,000	$187,000	$337,000	$38,000
Net	340,000	14,000	64,000	153,000	9,000

Preceding Year (Even Thousands)	Tompkins Falls	Burleyville	McGregor	Milford	Adams Center
Gross	$684,000	$36,000	$219,000	$401,000	$40,000
Net	417,000	15,000	61,000	162,000	2,000

The Adams Center plant was owned by a man, Simons by name, wealthy for that neighborhood, now 66 years of age. He had just previously married a young lady of 22, who wished to leave the prosaic surroundings of Adams Center. Accordingly Simons offered to sell the property for $40,000 cash. The preferred stockholders of Tompkins Falls and Milford were each offered new 7% preferred stock in the Cascade Power Company. The bondholders of each of the companies were offered 80% in cash for their bonds or the privilege of exchanging them for the 5% first mortgage bonds of the Cascade Power Company, "when, as and if" issued together with a bonus of 2½%.

Engineers estimated that the transmission lines necessary to connect the hydroelectric generating station to each of the distributing systems together with the necessary substations will cost in actual investment $117,000. It will require $27,000 to revamp the distributing system at Adams Center. $292,000 should be spent during the first year in the other

3 towns. This would increase the gross earnings of the 4 distributing companies by 27%. In addition, the electric railway company agreed to buy not less than 500,000 k.w.h. a year at 2.15 cents metered on the primary side at the Milford substation. Without reference to the capital charges, but including line and transformer losses, electricity so delivered would cost the company 73 cents. Without reference to the street railway contract the changes and improvements enumerated would reduce the operating ratio of the 4 distributing companies by 13%. The normal annual increase of the gross earnings of the hydroelectric company alone had been 9%, and engineers estimated that the cost of operation for the territory and customers previously served by it alone would be decreased after the consolidation by 1½%.

Prepare a financial plan for the promotion of the Cascade Power Company.

Problem XXXVI

The Nissitissett Development

Three men undertake the promotion of a hydroelectric power development in northern New York State. An engineer whom they have employed, reports the following essential facts: A river with a natural fall of 6 feet and rough water for half a mile above the falls can be developed by building a cement dam at or near the natural fall. This will cost, without machinery, $278,000. Land on both sides of the natural fall sufficient to give control and to erect a power station upon can be acquired for $67,000. The land on both sides of the river, above the falls, will have to be acquired or condemned. It will involve costs and settlements of at least $81,000. Six miles above the rough water the river spreads out over a large meadow. This must be acquired or condemned, at a cost of $32,000 and the dam site and dam for impounding the water will cost $17,000. It will also be necessary to acquire the land about the outlet of the river from a large pond, in order to control the flow, at a cost of $6,000; and damage suits from owners of timber, flowed from daming the outlet of the pond, might run to $20,000. These expenses, however, would not have to be met at the time of promotion. The equipment costs would be about as follows:

Water wheel machinery and installation, and electrical generating machinery and power-house would amount to $136,000. The rights of way

and construction of a transmission line of 32 miles for 33,000 volts, together with the transformers will cost $118,000. Engineers estimate that with the pondage and storage obtained from the large pond and the meadow dam the installation will develop 2,780 electrical horse power at an average of 18 hours per day for the entire year. In addition there would be at least 1,250 horse power during at least 8 months of the year. At the end of the 32-mile transmission line is a city of 10,000 inhabitants. The promoters obtained an option on the securities of the electric light company in that city on the following terms: $185,000 par value of first mortgage 5% bonds at 86, $90,000 par value of 6% preferred stock at 88 and $200,000 par value of common stock at 62. The preferred stock had no accumulated dividends and the common stock was then paying 4% a year in dividends. Electricity was generated by a steam station of fair efficiency, built about 7 years before. It had one k. w. g. e. turbine 7 years old, and one 500 k. w. g. e. turbine installed the year before.

The earnings of the company were as follows:

	Previous Year	Next Preceding Year	Next Preceding Year
Gross Earnings.....	$106,000	$98,000	$81,000
Operating Expense..	74,000	67,000	53,000
Net Earnings.....	32,000	31,000	28,000

The company had sold 2,684,000 k.w.h. electricity during the preceding year, but the load factor was poor. There were 3 knitting mills in the immediate locality of the city. These would purchase their power of the new development at 2 cents a k.w.h., and agree to take at least 1,000,000 k.w.h. annually altogether. The company could sell its entire surplus or secondary power at 1 cent per k.w.h.

The promoters decide to buy the distributing system and proceed to develop the water power. A new company is formed to absorb the old electric company and carry on the development.

Outline a financial plan.

Problem XXXVII

Promotion of a Highly Speculative Hydroelectric Development

Engineers discovered a water power in Arkansas capable, on development, of producing 28,000 h.p. of electrical energy at a net cost—mainte-

nance, labor, and superintendence—at the switchboard of only $12,000 a year. The river above the fall ran through steep banks so that the cost of development was very small, about $1,750,000 or less than $65 per horse power. But there were few consumers within 50 miles of the falls. The engineer planned to attract manufacturing industries that used large amounts of electrical energy to locate at or near the development and to sell them energy at a very low rate. There are numerous meteorological processes that can be used only when an abundance of cheap electrical energy is available. The engineer had secured an agreement from one of these to construct a plant at the fall which would use 10,000,000 k. w. h. a year at a price not to exceed 1 cent. He had other industries in prospect, the total gross revenue from which might reach as high as $200,000 for the first year.

Construct a financial plan by which bankers could obtain the requisite $1,750,000 required from the public.

Problem XXXVIII

The Selling Syndicate

The Kentucky Eastern Electric Company, a consolidation of 9 small electric companies, and a hydroelectric company has just contracted with Monson and Company of New York to sell to them $4,000,000 first mortgage 6% bonds for 87½. Monson and Company form a syndicate to acquire these bonds from themselves at 89. The syndicate agreement specifies that underwriters are to begin to offer the bonds to the public at 94 on April 1, and that the syndicate will close on or before May 1. Members will receive a selling commission of 3 points on all the bonds they sell and will participate in the profits and losses on the syndicate operations, as of May 1. James Mason and Company of Buffalo participated to the extent of $100,000. On April 23 the managers announced that all the bonds had been disposed of. At that time James Mason and Company had sold $65,000.

Compute their gross profit. Suppose Monson and Company had participated to the extent of $500,000 in their own syndicate and had actually sold $627,000 at the time of closure.

Compute their gross profit from the Kentucky Eastern electric business.

Problem XXXIX

Syndicate Underwriting for an Established Corporation

There was a boom period of the textile business, during the later part of and immediately following the Great War. It was followed in the summer and autumn of 1920 by a very marked reaction. At the height of the boom the Continental Woolen Company offered to sell to its stockholders $20,000,000 new common stock at par. The stock was then selling at about $112 a share and had sold immediately before as high as $140 a share. A syndicate was formed which, for a commission of 1½%, underwrote the stockholders' subscriptions. The market for the stock continued to fall and only 40% of the subscription was taken by stockholders. In order to protect the market the syndicate managers had bought 73,000 shares in the open market at prices ranging from 101 down to 87, an average of 96⅛. Finally after a series of postponements the syndicate was dissolved. Meanwhile the managers had paid $156,000 in interest for carrying the syndicate commitments and no dividends had been received. The stock, at the time of the dissolution, was selling at $53 a share. Harrison and Company of Cleveland had subscribed to $250,000 of the underwriting.

What was their actual profit or loss, as computed on the current market value of the stock at the time of settlement?

Omit from consideration syndicate manager's commission.

Problem XL

Underwriting Commissions

The Central Railroad wished to insure the successful sale to its own stockholders of $100,000,000 6% debenture bonds at par. Accordingly an underwriting syndicate was formed by James B. Manson and Company, acting as managers. They received ½ of 1% commission for forming the syndicate, and the underwriters were paid 2% on their commitments. Eustis and Company of Syracuse underwrote $60,000 of the debentures. The subscription was taken up entirely by the stockholders.

(a) What was Eustis and Company's profit or loss?

(b) Suppose the stockholders subscribed for only $60,000,000 of the debentures and the managers sold the remainder on the open market and in Europe at an average of 90%. What was their profit or loss?

Problem XLI

Bankers' Profit or Loss

James Ellis and Company, established investment bankers of Philadelphia, wish to compute their profit or loss in handling $1,000,000 par value of the first mortgage 5% bonds of the Kenyon County Electric Company. The following facts are available:

Before purchasing, the buying department reported the following expenses:

Lawyers' Fees	$1,600
Accountants' Fees	900
Engineers' Fees	2,700
Traveling and Other Expenses	1,180
Clerk Hire and Other General Expenses to be Allocated to this Purchase	518

The bonds were purchased at 88. They were sold by the selling department to the public at 93. The salesmen of the house devoted themselves exclusively to the issue for one week, put about half their time upon it for 2 weeks, at the end of which time the issue was entirely sold.

The salesmanager received a salary of $10,000 a year.

Each salesman received a commission of 1½ points on every bond sold and an extra bonus of $1,000 to be divided evenly among them in case a new issue should be entirely disposed of within one month of its initial offering. The direct selling expenses to be specifically allocated to this issue were:

Printing	$346
Postage	186
Clerk Hire	72

The general "overhead" of the selling department amounted to $4,760 a year. The firm set aside ⅛ of 1% on the issue to maintain a market of 91-93 to its customers.

What was Ellis and Company's profit or loss?

Part III—The Financial Administration of Corporations

The earlier problems in this part deal especially with accounting questions. The point of view, however, should be that of corporation finance, and the technique of accounting should not be over-emphasized.

Problem XLII

Repairs

The Newark, Maine, Gas Company found that a considerable proportion of the repairs to its mains and structures could be done most economically in the months of June, July and August when the ground was free from frost, the weather settled, and labor relatively plentiful. Owing to the severity of the cold, repairs to mains cost, by actual computation, from 3 to 4 times as much if made in the middle of winter compared with the same repairs if made in the summer. But the policy of making repairs only in summer created such large fluctuations in the repair charges as to abnormally increase the earnings during the winter months and to abnormally decrease the earnings during the summer months. To avoid this the directors, at their meeting of December 18, 1919, appropriated $15,000 out of earnings for the forthcoming year to be used for repairs, the sum of $1,250 to be charged against the earnings of each month. The following were the expenditures for repairs during the year 1920: January, $638; February, $1,371; March, $311; April, $442; May, $932; June, $3,161; July, $1,430; August, $1,571; September, $1,211; October, $931; November, $219; December, $398.

How would you treat, on the balance sheet of December 31, 1920, any discrepancies between the allotted repair charges and the actual repair charges?

Problem XLIII

Maintenance

The Milford and Springfield Railroad, operating in New England, has found that its untreated cross ties decay, or become of no further use, in seven years. The road encounters a bad year, after having operated for a long period with ample but not inordinately liberal maintenance allowances. In the endeavor to reduce expenses the superintendent of maintenance of ways and structures appropriated $107,000 for the purchase of ties, a reduction of $13,000 from the appropriation of the previous year.

But in the meantime the prices which the road was forced to pay the farmers for ties was raised 15 cents for No. 1 and 11 cents for No. 2. In consequence the road replaced one-tenth of all its ties.

Could or should its treatment of tie replacements be made to show on its balance sheet at the end of the year? Explain your answer.

Problem XLIV

Depreciation

The following is the balance sheet as of December 31, 1917, of the Conway Manufacturing Company, in existence for 8 years:

Assets		*Liabilities*	
Land (cost)	$ 12,300	Capital Stock	$500,000
Building (cost)	117,480	Notes Payable	30,000
Machinery (cost)	318,710	Accounts Payable	19,317
Inventories	279,414	Depreciation Reserve	131,123
Notes and Accounts Rec.	137,618	Surplus	212,400
Cash	27,318		
	$892,840		$892,840

The income account for the year 1918, before dividends and depreciation, was as follows:

Total Gross Profits after Adjustments for Inventories, Returns, and Bad Debts	$218,973

The accountants required that the buildings be considered to have had, when built, a life of 20 years and the machinery a life of 10 years. But new machinery and large building improvements could be substituted for depreciation. During the year in question a new store house was built at a cost of $2,718 and new machinery was installed at a cost of $16,752. A dividend of 10% was paid and the rest of the earnings added to surplus.

Give a possible balance sheet for December 31, 1918, improvising reasonable entries where necessary.

Problem XLV

Depreciation

The Endicott County Electric Company, having fixed assets of $1,764,000, when built in 1910 sold an issue of $1,500,000 5% bonds to an investment house whose attorneys inserted in the indenture the provision that the company must set aside 3% of gross earnings each year as a depreciation reserve. The following gross earnings were obtained·

1911.....	$156,872
1912.....	162,512
1913.....	172,660
1914.....	170,117
1915.....	159,131
1916.....	184,284
1917.....	210,653

At the beginning of 1918 the property—there having been no important capital improvements made in the meantime—was acquired by the Inter-County Power and Light Company. The management paid off the outstanding bond issue, thus relieving the company of the 3% depreciation obligation. Arthur Gray and Company, accountants, were employed to reorganize the accounting system. They condemned with great severity the method previously followed in computing the annual depreciation, and suggested that accountants go back over the books and re-establish a depreciation reserve on the assumption that a 4% annual reserve on the original cost of the entire property would have been proper. This was done.

What adjusting entries would have been necessary? Construct a reasonable and proper balance sheet for the Endicott County Company when taken over by the Inter-County Company, and a second balance sheet after the advice of Arthur Gray and Company had been followed.

Problem XLVI

Accounting for Depreciation

The Paugus Mill, a 60,000 spindle medium goods cotton mill, was constructed in Fall River. $25,000 was paid for land; $216,000 was paid to the contractors for the erection of the buildings; $109,000 to a firm of engineers for the installation of a power plant and power transmission machinery; $739,000 was paid for machinery covering the various processes for the manufacture of cotton cloth. At the end of the first year Johnson, McHugh and Company, mill engineers, estimated that the proper depreciation charges were: structures, 5%; power plant and transmission machinery, 7½%; and cotton machinery, 10%. The profits, before depreciation and dividends, for the first year were $117,318.

What were the net earnings before dividends?

Problem XLVII

Obsolescence

James Fleming, an engineer, made the following report to a firm of accountants about to open the books of The Sandy Lake Electric Company, with reference to the requisite depreciation and obsolescence charges.

The management, in order to protect their company against competition of more efficient plants in later years, wished to set up a reserve not only for depreciation but also for the obsolescence of equipment.

On the basis of Fleming's report, what should be the annual charges for both depreciation and obsolescence?

	Cost (Approximate)	Average Life Under Normal Conditions	Probable Number Years It May Be Used Before It Will Be Expedient or Economical to Substitute Improved Models
Power-House			
Buildings.....	$42,000	40 years	50 years
Boilers, Superheaters, etc.....	27,000	20 years	15 years
Generating Machinery (Exciters, Steam Turbines and Condensers)..	48,000	15 years	10 years
All Other Equipment to the Transformer Platform....	18,000	20 years	20 years
Transmission Lines			
Transformers, etc...	9,000	12 years	.....
Poles (Including Pole Hardware)...	7,000	15 years	.....
Wire.....	16,000	.....	.....
Distribution			
Meters.....	6,000	10 years	.....
Small Transformers	2,000	10 years	.....
Secondary and Services.....	8,000	50 years	.....

Problem XLVIII

Depreciation and Obsolescence

James Hardy and Company are manufacturers of jewelry specialties in Attleboro, Mass. Their accountants decide that they should make a general charge of 2½% to cover the depreciation on their buildings costing $85,000 and 7½% on their machinery and equipment costing $115,000. Mr. Hardy, however, is not satisfied with this rough method. The business uses certain special machinery which is being constantly improved upon. Since the industry is a highly competitive one it is necessary to substitute improved machinery as soon as this is put upon the market in order to keep down the manufacturing costs. During the 40 years of his business experience as a manufacturing jeweler he noted that these substitutions occur in certain of the processes with greater frequency than in others. For example, he observes that of the $115,000 invested in machinery at least $35,000 is invested in well standardized machines which have not changed significantly during the last 40 years. On the other hand it has been necessary to discard certain special machines, costing $25,000 on an average of every 5 years. About $40,000 of other more or less specialized types have to be discarded and improved models installed about once in 10 years. The economical operation of the remainder of the machinery is not of such great importance as to require the substitution of improved models before it is worn out. Mr. Hardy passes a memorandum covering these observations to his accountants and asks them to recompute the depreciation charge, taking full account of the obsolescence of his machinery.

What change must they make, if any, in their original computation?

Problem XLIX

Dividend Policy of the Whiting Mills, Inc.

James Whiting, the American born son of an emigrant mule spinner who came from Lancashire, to New Bedford in 1847, has been working in the Sanborn yarn mill since he was 11 years of age. He is now 33, has gained a thorough technical knowledge of the manufacture of fine yarns and meanwhile he has attended the local textile school, evenings. He has shown remarkable mechanical ingenuity as is attested by the fact that he

received a patent on an improved winder for which a machinery manufacturer paid him $10,000.

Two years before a local capitalist, connected with a Boston commission house, being impressed with the man's ability, secured subscriptions to $1,000,000 in money in order to build a yarn mill. The capitalist, Avery by name, became President and Whiting Treasurer. Avery's commission house assumed responsibility for selling the yarns and the entire management of the mill was turned over to Whiting.

The mill cost $786,000 in money to erect. Seventy-four thousand dollars was subscribed by a Providence machinery house making the total capital invested in the enterprise—its net worth at the beginning—$1,074,000.

The balance sheet when the mill was opened stood as follows:

Assets		*Liabilities*	
Plant	$ 786,000	Capital Stock	
Cotton	82,000	Preferred 7% Cumulative	1,074,000
Cash	206,000	Common	1,000,000
Good Will	1,000,000		
	$2,074,000		$2,074,000

The preferred stock, representing actual money investment, is owned as follows:

Avery, personally	$100,000
Avery, Green and Co	300,000
Whiting, personally	100,000

(This amount constituted Whiting's entire savings of $17,000 and $83,000 loaned to Whiting by Avery who took Whiting's preferred and common stock in the Whiting Mills Inc. as collateral.)

Avery's Personal Friends	165,000
Whiting's Friends, Associates and Small Investors of New Bedford who Invested on the Strength of Whiting's Reputation	175,000
Local New Bedford Bankers	135,000
A New York Yarn Merchant	25,000
Providence Machinery Manufacturer	74,000
	$1,074,000

The $1,000,000 of common stock was divided equally between Avery and his commission house on the one hand and Whiting on the other hand.

At the end of the first year Whiting presented to the board of directors of the mill the following income account and balance sheet before dividends.

Gross Profits after Returns, Inventory Adjustments, etc.	$161,812
Depreciation 4% of Original Cost	31,440
Interest Payments, Bank Discounts	12,916
Net Profits	$117,456

Assets		*Liabilities*	
Plant	$ 786,000	Capital Stock	
Cotton	109,117	Preferred 7% Cum.	$1,074,000
Goods in Process and		Common	1,000,000
Finished	213,918	Depreciation	31,440
Accounts Receivable	301,715	Notes Payable	226,570
Cash	38,716	Surplus	117,456
Good Will	1,000,000		
	$2,449,466		$2,449,466

At the time the preferred stock was subscribed, Whiting and Avery stated that no dividend, preferred or common, should be paid until the end of the first year and then only if the earnings fully warranted it. Every subscriber understood the cotton yarn business.

At the directors' meeting Avery's partner Green moved that a dividend of 7% be declared and paid on the preferred stock and 1% on the common out of the earnings of the first year. Avery objected to the payment of the dividend on the common stock, but would not vote against the preferred dividend if the rest of the board of directors so voted. Whiting stated that he was opposed to any dividends whatever. Thereupon a three-cornered argument ensued between Green, Avery, and Whiting.

State under appropriate headings the arguments advanced by each.

With whom would you have voted and what was the strongest

argument advanced? (Consider yourself a director having a small preferred stock interest and permanently interested in the welfare of the mill.)

Problem L

Dividend Policy of the Mayer Manufacturing Company

An expert rubber chemist, James Mayer by name, commenced the business of manufacturing rubber specialties, in 1910. Twenty-five thousand dollars was loaned to him by his father-in-law who accepted his note. The local bank in Binghamton, where the business was started, loaned him $10,000.

The business was a success from the beginning. By 1916 Mayer had paid off his father-in-law and increased the net worth of his business to $118,000. At that time he decided to incorporate his business and erect a small tire factory in Akron, Ohio. He planned to concentrate his efforts on the manufacture of a special hand-made tire using a special patented "zinc" process and a coarse fabric carcus made out of selected combed Egyptian cotton. To carry out his plans Mayer required at least $1,000,000, $125,000 of which he could secure from selling his Binghamton factory and liquidating the quick assets of the business. The remaining $875,000 was promised him by a firm of Cleveland bankers through the organization of a small syndicate. These plans were carried out and by the autumn of 1917 a small but thoroughly modern and efficient factory had been built in Akron and the business started. The $1,000,000 of actual money was represented by 7% cumulative preferred stock. In addition $500,000 in common stock was issued to Mayer and the same amount to the syndicate of bankers who furnished him with the greater part of the capital.

This business, too, was a success from the very beginning. During 1918, the first full year, the Mayer Manufacturing Company made on gross sales of $1,967,000 a net profit after reasonable charges to depreciation of $171,918. From this preferred dividends of $70,000 were paid and the remainder carried to surplus and reinvested in the business. The year 1919 was very successful also, and the business during the first five months of 1920 was of unprecedented volume. On June 1, 1920, the Company showed the following monthly balance sheet (even 000):

Assets		*Liabilities*	
Plant	$1,218,000	Capital Stock	
Good Will	1,000,000	Preferred 7% Cumulative	$1,000,000
Rubber, Cotton Fabric and Other Materials	310,000	Common	1,000,000
Goods in Process and Finished Tires (Akron)	216,000	Notes Payable, Banks	350,000
Tires on Consignment with Special Agents and Service Stations	93,000	Foreign Drafts	74,000
Customers' Notes	84,000	Accounts Payable	289,000
Customers' Open Accounts	59,000	Depreciation Reserve	42,000
Cash	37,000	Profit and Loss	262,000
	$3,017,000		$3,017,000

President Mayer reported to the directors at the meeting of June 8, that the company's policy was to place a reasonable number of tires in the hands of special agents who featured the Mayer tire at the exclusion of other makes. In addition to their consignments, however, the company had then on hand actual orders from retail dealers and garages sufficient not only to exhaust the present stock of finished goods in the Akron warehouse but to keep the factory in full operation until August 15. The orders booked for the first week in June were 165% of the orders booked during the first week of June, 1919. There had been a steady rise in the wholesale prices of plantation rubber and Egyptian cotton, and President Mayer expressed the belief that rising prices of raw materials would continue throughout the year. He desired, therefore, the authority of his board for entering immediately into contracts with importers of crude rubber and cotton fabric mills to cover all the orders now on hand and the probable normal demand up to October 1. This would involve contracts of about $380,000 at the then prevailing prices. The board of directors voted the authority without discussion.

The rate of new orders began to decline slightly on June 17. By July 1, cancellations of orders, a factor never before reckoned with, began to appear and at the same time the automobile industry, upon which the tire industry is directly dependent, sustained a sudden collapse. Mayer, following the authority of his board, had ordered $118,000 worth of tire fabric and approximately $93,000 of crude rubber. On June 23, he ceased to place further orders and on July 4 secured the cancellation of $37,000 of

his order of fabrics (that proportion on which the mills had not themselves covered on raw cotton). He could not honorably repudiate any of his crude rubber contracts, and he did not try to.

By September 1, the tire business had suffered a complete collapse. By careful planning Mayer had been able to dispose of a considerable proportion of his manufactured stock so that no actual loss resulted. He had ceased to manufacture altogether about August 20. At the Directors' Meeting of September 7, the following balance sheet was presented:

Assets		*Liabilities*	
Plant	$1,218,000	Capital Stock	
Good Will	1,000,000	Preferred 7% Cumulative	$1,000,000
Rubber, Fabric and Other Materials on Hand (cost $116,000 at Market)	67,000	Common	1,000,000
		Notes Payable, Banks	313,000
		Accounts Payable	98,000
Tires on Hand and on Consignment (80% of Cost)	101,000	Depreciation Reserve	42,000
		Profit and Loss	241,000
Customers' Notes (probably 95% good)	162,000		
Customers' Open Accounts	81,000		
Cash	65,000		
	$2,694,000		$2,694,000

In addition, the Company is under contract to receive $27,000 worth of fabric (having then a market price of about $21,000) and $62,000 worth of crude rubber (then having a replacement value of about $37,000). Both the fabric and rubber markets were falling.

The president stated that he was making "special offers" and the like to agents with the result that his stock was moving on the whole satisfactorily although the prices then being realized were about 85% of the actual cost of manufacture. He hoped to re-open by October 1, on the basis of reduced labor and material cost. He felt on the whole encouraged in spite of the chaotic conditions of the crisis through which he was then passing. The dividend on the preferred stock had always been paid. He asked the directors to consider the advisability of paying the quarterly dividend of 1¾% due October 1.

What is your judgment?

Problem LI

Sinking Fund Payments of the Muddy Creek Coal Company

The Muddy Creek Coal Company was organized in 1908. In 1910, in order to purchase and develop an adjacent coal property, the directors issued $1,500,000 20-year, 6% gold bonds. The bankers required the insertion of a sinking fund clause which required that the company must set aside 5 cents a ton for every ton of coal mined and that the fund must amount to at least $45,000 a year.

The sinking fund was to be invested in bonds purchased at the market price.

In 1912 the Company mined 1,687,534 tons of coal. During January, 1913, when bonds were acquired for the sinking fund, the market price was about 86½.

How many bonds were acquired?

Problem LII

Sinking Fund Payments

The Interurban Consolidated Traction Company, a holding corporation organized under the laws of Delaware, owns the stocks, debentures, notes and certain mortgage bonds of a group of traction companies operating in Illinois.

The Interurban Company issued in 1917, $3,685,000 first lien collateral trust 6% bonds secured by all its treasury assets. The collateral trust agreement under which these bonds were issued provided that a fund consisting of 2% of the gross earnings shall be set aside each year for the purchase at the market price of either bonds of this issue, or else bonds of the underlying companies senior to it.

The following is a balance sheet of the Interurban Consolidated Traction Company as of December 31, 1918 (even 000) and before the acquisition of bonds for the sinking fund:

Assets		*Liabilities*	
Property Account.....	$13,295,000	Decatur and Georgetown 6's 1924.....	$ 516,000
Bonds in Treasury:		Cairo and Eastern 4's	
Decatur and Georgetown 6's.....	402,000	1949.....	768,000
Cairo and Eastern...	23,000	Illinois and Southern	
Illinois and Southern	98,000	6's 1930.....	310,000
Interurban Collateral		Interurban Traction	
6's.....	13,000	Company Collateral	
Accrued Interest on		Trust 40-Year 6's	
Treasury Bonds.....	7,000	1957.....	3,685,000
Materials.....	248,000	Debenture Notes 7's	
Advance Payments....	8,000	1923.....	1,000,000
Discount on Bonds less		Bills and Accounts Pay-	
Profit from Purchase		able.....	165,000
of Treasury Assets...	85,000	Interest Accrued.....	76,000
Deferred Assets, Misc.	16,000	Preferred Stock 6%	
		Cumulative.....	2,000,000
		Common Stock.....	5,000,000
		Surplus.....	675,000
	$14,195,000		$14,195,000

December 31, 1918 the bonds of the Decatur and Georgetown could be bought in the open market for 92; the 6% bonds of the Illinois and Southern could be bought in the open market for 98 and the 4% bonds of the Cairo and Eastern could be bought for 76, while the first lien collateral 6's of the Interurban Consolidated Traction Company itself could be bought for par.

The following represents the income account for the preceding year:

Gross Income.....	$2,273,675.30
Operating Expenses.....	1,492,414.65

Considering all things—economy, saving in amortization, an increase of security of the junior securities of the Interurban Consolidated Traction Company—in what manner should the sinking fund be invested?

Recast the balance sheet given above after these purchases have been made.

Part IV—The Expansion of Corporations

These problems illustrate the expansion of a small business into a large business, either by mere internal growth or by combination with other corporations. Attention is drawn to the fact that the line between promotion and expansion is sometimes difficult to draw. In that sense, some of the problems of Part II, Promotion, lead up directly to the problems given here. As far as possible the two sets should be compared.

Problem LIII

Expediency of Small Industrial Combination

In the city of Worcester, Massachusetts, in 1917, there were 7 small custom foundries and drop forges, each doing a relatively small business. Owing to the hectic prosperity of the metals trades in the United States, everyone of these small shops had more orders for work than it could execute. One of the younger men, Thomas Gilson by name, thought of the idea of combining them into a single corporation. Gilson, an expert in the manufacture of small drop forgings, knew nothing about finance. He did have the conviction, however, that if the 7 competing forges and foundries were united under one management, each unit could specialize in a special type of orders. He thought over the matter a long time, and finally went to a young investment banker who had married a schoolmate of his wife's. The banker, Edward Halladay of Halladay, Richards and Co., offered to try to effect the consolidation, to meet all the expenses incident to the undertaking, including attorneys' and lawyers' fee in return for a fee of 10% of the common stock of the consolidation. Halladay called a meeting of the proprietors and partners of the 7 foundries and forges at which, having been properly coached by Gilson, he explained the advantages of consolidation. Among these advantages he enumerated: collective pur-

chases of iron and coal; a uniform and stronger policy of dealing with labor unions; distribution of orders to the foundry or forge, best able to take care of them; easier access to bank credit; and better credit with the furnace men. Halladay's talk made a favorable impression, but the men were skeptical about the possibility of arranging terms suitable to all 7 of the owners. Halladay proposed different plans all looking to the formation of a corporation having only preferred and common stock. The plans differed only in the manner in which the preferred and common stock was distributed among the owners of the plants.

Outline 4 different plans that might have been suggested.

Problem LIV

The Towner Corporation

There were 4 carpet mills located within 60 miles of each other. The following is a brief description:

The Cartersville Mill. The corporation, organized in 1897, owned a small modern mill devoted to the manufacture of inexpensive ingrain carpets. James Edgarson built the mill and was the largest stockholder in the corporation—in fact all the stock was held by Edgarson, his wife, his uncle and their very close friends. Edgarson had made a great deal of money from the mill and had withdrawn the earnings each year and invested them in high-grade municipal bonds. The mill had never been enlarged or extended. Edgarson, now 62 years of age, wished to retire altogether from the business and move to California.

The Empire Corporation. Organized in 1912. This mill was about the same size as the Cartersville mill, but had larger liabilities at the banks. It was owned by a group of Philadelphia men and managed by John Towner. He was about 38 years of age and then recognized as distinctly the ablest carpet man among the younger men. He had the absolute confidence of his stockholders and associates. He was ambitious, keen, unmarried, and his business was his one and only thought.

The Sawyer Manufacturing Company and the Climax mills. Small carpet mills owned by about the same people, although the managements were separate. The Sawyer mill was located in the same town as the Empire. It was the oldest mill of the entire group, built over 50 years before, antiquated and inefficient. But its brand "The Chesterfield Wiltons" was

highly esteemed in the trade. The Climax mill had been acquired 6 years before at a receiver's sale by the 3 largest stockholders of the Sawyer mill. During the 6 years it had been operated by them, it had made a little money. The plant was antiquated and not capable of efficient operation.

Towner approached Alden Richardson, the largest single stockholder of the Empire Corporation and a man of large means with the plan of acquiring the Cartersville, Sawyer and Climax Mills, and organizing a new corporation. Richardson promised to back Towner in the undertaking to the extent of $500,000. He also promised to secure for him the co-operation of Wilkins and Company, bankers.

Towner secured an option from Edgarson to be exercised within 90 days, covering the entire stock of the Cartersville mills for the sum of $1,200,000 from which would be deducted an amount equivalent to any bank or merchandise loans outstanding at the time the option was exercised and increased by an amount equal to the actual cash in the treasury. But Edgarson guaranteed that there would be at least $500,000 net quick assets. The money would have to be paid within 30 days of the time the option was exercised. Towner also secured an option on 86% of the common "one class" stocks of the Sawyer and Climax mills, to be bought at $72 and $37.50 a share respectively. Neither could, however, be purchased separately.

Wilkins and Company after several interviews promised to furnish money up to a maximum of $1,500,000 under the following 5 conditions:

1. The money they supply to be represented by an issue of 7% preferred stock, none of which issue shall be given to any mill owner nor sold to any banker. The bankers will purchase the stock at 90%.
2. $500,000 in money be subscribed by Richardson who shall receive second preferred stock to the extent of $500,000 par value and a bonus of common stock.
3. Common stock only shall be given the stockholders of the Empire Corporation.
4. Towner to sign a contract to remain with the new corporation for at least 3 years.
5. The net quick assets of the consolidated company shall be at least $600,000 to start with and must at all time remain at least a third as much as the outstanding first preferred stock.

These terms were agreed upon by Towner and Richardson, who forthwith prepared a plan of consolidation to be presented to the stockholders of the Empire Corporation.

The consolidated company was to be called "The Towner Corporation."

The following represent, in abbreviated form, the balance sheets of the four companies (even ooo):

Assets

	Cartersville	Empire	Sawyer	Climax
Plant	$ 873,000	$ 994,000	$365,000	$219,000
Inventories (wool, finished and unfinished goods)	592,000	417,000	284,000	111,000
Accounts	318,000	294,000	97,000	32,000
Cash	82,000	17,000	3,000	12,000
	$1,865,000	$1,722,000	$749,000	$374,000

Liabilities

	Cartersville	Empire	Sawyer	Climax
Capital Stock:				
Preferred	$ 400,000	$ 700,000	.....	.....
Common	400,000	300,000	$500,000	$250,000
Depreciation	216,000	28,000	.....	1,000
Bank Notes	200,000	485,000	115,000	100,000
Accounts	38,000	198,000	81,000	21,000
Surplus	611,000	11,000	53,000	2,000
	$1,865,000	$1,722,000	$749,000	$374,000

Prepare a plan of consolidation such that it shall enlist the aid of Wilkins and Company and also be fair to the shareholders, preferred and common, of the Empire Corporation. Indicate the final disposition of all the stock of The Towner Corporation.

Problem LV

The Acquisition of the Gray's Point and Heron Bay Railroad

The Eastern Central Railroad required the Gray's Point road to reach tidewater. On the other hand the Gray's Point road could not even meet its operating expenses—much less its interest charges—were it not for the very favorable traffic agreement covering the interchange of freight executed 24 years before when the Eastern Central was an insignificant road, directly and explicitly dependent on the Gray's Point connection for over 60% of its traffic interchange. Meanwhile, the Eastern Central, through consolidation and intensive development, had become an important railroad, while the Gray's Point and Heron Bay Railroad had remained a purely local enterprise, stagnant and self-satisfied. Within a year the traffic agreement by which alone it could maintain its existence would expire.

It was clear that no choice was left for the Gray's Point road but to accept the terms proffered by the Eastern Central. Already the president of the latter road had intimated to Moses Collinwood, octogenarian and principal stockholder of the Gray's Point and Heron Bay, that unless arrangement could be made for consolidation of the 2 roads, the Eastern Central would feel constrained to build its own line to tidewater as the directors felt that the water terminal facilities should be improved and a more aggressive policy followed in developing rail and water routes over the Eastern Central.

After considerable negotiation, the Eastern Central Railroad made a proposition to acquire the Gray's Point road according to whichever of 3 plans seemed best to the directors and stockholders of the Gray's Point road. The Eastern Central would guarantee the interest on the bonds and guarantee 4% dividends in perpetuity on the stock of the Gray's Point road. Or, secondly, it would acquire the stock at $72.50 a share, of which $12.50 was to be paid in cash and the remainder in the 5% collateral trust bonds of the Eastern Central Railroad, secured by a deposit of the Gray's Point stock as collateral. Or, again, the Eastern Central would pay a lump sum of $2,250,000 for the physical property of the road, out of which the Gray's Point directors must settle with their own bondholders and divide the remainder among the stockholders. In this event, the Eastern Central Railroad had planned to create a new issue of 5% bonds, to be secured by a first mortgage on the property of the Gray's Point road and to be called the Eastern Central, Gray's Point Division first mortgage 30-year 5's.

Symons and Company of New York had agreed to buy $2,500,000 of these bonds at 90% in the event that they were issued.

Appended are the principal operating statistics of the Gray's Point and Heron Bay Railroad for a period of years, and balance sheet as of the first of the month preceding the offer of consolidation.

BALANCE SHEET

Assets		*Liabilities*	
Cost of Road....	$2,976,000	Capital Stock.....	$1,000,000
		First Mortgage 4% Bonds.... (27 years to run)	1,000,000
Materials and Supplies.....	37,469	Second Mortgage 6% Bonds... (10 years to run)	700,000
Cash.....	19,816	Bond Interest Accrued.....	10,000
		Material and Wages Accrued..	4,876
		Surplus.....	318,409
	$3,033,285		$3,033,285

Were you a director of the Gray's Point and Heron Bay Railroad, which offer would you vote to accept?

Which offer should Collinwood recommend to his fellow directors and stockholders that they should accept?

Which offer was, on the whole, the best for the interests of the Eastern Central Railroad?

Problem LVI

The Organization of the Bowdoin and Western Railroad

There is a railroad extending west from Bowdoin, a city of 48,000 inhabitants, to Charlottestown, a railroad center of 12,000 inhabitants. The line is 134 miles in length, and has in addition 4 branch lines, aggregating 91.6 miles. One of the branches reaches into an important manufacturing center of Greensboro. Greensboro is on one of the main east-west lines of the Pennsylvania Railroad, so that the Bowdoin and Charlottestown Railroad gets only a small proportion of the desirable freight out of Greens-

OPERATING ACCOUNTS

	Preceding Year	Year Before	Year Before	Year Before	Year Before	Year Before	Year Before	Year Before
Revenues								
Freight	$429,992	$398,889	$351,983	$390,790	$312,885	$288,665	$275,496	$272,614
Total	546,437	498,343	435,808	482,390	394,640	374,598	350,852	342,898
Operating Expenses	381,058	326,986	289,986	317,981	275,564	264,139	244,515	226,356
Net Revenues	165,379	171,356	145,822	164,498	119,076	110,459	106,337	116,541
Taxes	24,393	16,366	14,466	15,874	13,494	13,309	13,758	10,142
Interest on Bonds	82,000	82,000	82,000	82,000	82,000	82,000	82,000	82,000
Dividends	50,000	50,000	40,000	40,000	0	0	0	20,000

boro. But at Charlottestown it connects with an important north-south line of the New York Central system. The latter does not reach Greensboro directly and uses the Bowdoin and Charlottestown Railroad and its Greensboro branch as its only way of reaching Greensboro. The amount of freight the New York Central turns over is considerable and the traffic contract with the Central is, on the whole, very profitable.

The President of the Bowdoin and Charlottestown Railroad, Herbert Anderson by name, was an able railroad executive, well thought of in the locality. He was a friend of John O'Brien, the division superintendent of the Central located at Charlottestown. One evening in the winter of 1920–1921 O'Brien met Anderson on the corner of Main and Mercer streets in Charlottestown, and the following conversation ensued after the usual preliminaries.

O'Brien: Just been talking with Danny MacGregor, and he said they are up against it to meet their pay-roll. Blevins, he said, had gone up tc Pittsburg to see old man Peters. Guess the old shark is about through.

Anderson: If I'd buy the road suppose you could get me the same contract with the Central?

O'Brien: Sure, only you'd have to still call it the B and C.

Anderson: That's all right.

O'Brien: So long. Don't make a fool of yourself, and let old man Peters put it over.

Anderson: So long, Johnny. Don't worry about me. I guess Peters can tend his own chestnuts.

Ten days later Anderson sought out O'Brien at the latter's home and the following conversation ensued:

Anderson: Well, I've bought the Charlottestown and Western.

O'Brien: What's that!

Anderson: Johnny, old boy, when I was in school back in the old farm days in Wayne we had an old maid teacher, Mary Stebbins. We boys called her Stebby. One day I pulled Flossy Kennifick's pig tail. As I rode down to Pittsburgh last Thursday the train stopped at the Wayne station, and I looked across and saw the same little school house, and the children were running out at noon, and a little fellow chased a girl and pulled her pig tail, just as I did thirty years ago. And then the train moved and I didn't see any more, but when I pulled Flossy's hair old Stebby made me stay after school and copy a verse of poetry ten times. And the first line went, "There is a tide in the affairs of men," and the rest of it said something about taking advantage of opportunity. Then I got to thinking how little I'd made of myself and how much opportunity I'd had and all that sort of

thing, and still the beginning of that poetry kept running in my mind. And when we got to Pittsburgh I could have done anything. I knew now was my opportunity. I'd have a real railroad. I'd be somebody instead of pegging away with this old junk. And I hurried up to old Peters' office. He was alone, reading a newspaper. I broke right in:

"Mr. Peters, my name is Anderson. I'm President of the Bowdoin and Charlottestown Railroad."

"Yep," said Peters, "I heard Mr. Blevins speak of you."

"Well," I said, "I want to buy the Charlottestown and Western." The old shark looked at me a moment, then said: "It isn't for sale."

I said: "Very well, then, I'll wait until the receiver has it for sale." Thereupon Peters grunted and I made a motion to get out. The old man then said: "Well, suppose it was for sale, how much would you pay for it?"

I said: "Five hundred thousand dollars."

"Nothing doing!" said Peters. "I've got over a million in it now and I bought it from the Jordans and they dropped at least two million before."

"Well," I said, "I'll wait for the receiver." After a while the old shark asked me how much money I'd got. I said, I had a few thousand dollars with me, I could get forty thousand by the end of the week, and I'd agree to pay the rest in three months. Then he said I'd have to agree to take care of the debts. I said, "No, I wouldn't have to if I bought it of the receiver." Well, that's all there is to it. We signed a paper and he took my ten thousand dollars. I have a check for forty thousand dollars in my pocket now that Grace's father gave me.

But this is only the beginning. Yesterday I went to Crocket, the largest stockholder of the Bowdoin and Southern. He said he thought I could probably lease the road if I'd guarantee the old bond interest and pay a fair guaranteed dividend on the stock. And I've just secured from the widow of Jake Halloway, who owns a third of the Osterville and Eastern stock, an option at $27 a share. Her lawyer said it was worth $40. I said $10 was a fair price, so we agreed on $27. The lawyer said he could get at least two thousand shares more if I would agreed to give at least $27 a share. Now, Johnny, I want you to come in on this. You've worked for somebody else long enough. We can hit it off together. I'll put the thing through. Grace's father is going to get me some money in New York, and he promised to sell any bonds or stock I'd have. His bank has some correspondent bank in New York that buys railroad securities. You keep on working for the Central until after the consolidation is finished, and see to it that I get a good contract with the Central. Then you come as Superintendent of my road. I'll give you some stock same as I get.

The following represents in abbreviated form the operating and financial statistics regarding the roads to be consolidated:

	Bowdoin and Charlottestown	Charlottestown and Western	Bowdoin and Southern	Osterville and Eastern
Bonds	$3,000,000	$1,000,000	$4,000,000	$ 300,000
Common Stock	5,500,000	2,000,000	5,000,000	1,000,000
Unfunded Debts	200,000	117,000	1,350,000	214,636
Freight Receipts	1,310,315	285,684	1,918,711	370,437
Total Revenues	1,823,264	314,119	2,614,897	466,918
Operating Expenses	1,268,144	302,916	1,613,532	364,707
Net Revenues	555,120	11,203	1,001,365	102,211
Taxes	52,666	11,817	61,817	17,610[1]
Interest on Bonds	180,000	50,000	220,000	15,000
Dividends	165,000	.....	300,000	20,000

Prepare a plan of consolidation, including the tentative arrangements that Anderson stated he had made, such as to afford the basis for a successful operating railroad.

Problem LVII

A Public Utility Holding Company

The city of Jefferson in Pennsylvania has a natural gas company, a street railway connecting Jefferson with Whitesboro in one direction and Gardner in the other, an electric company that supplies Jefferson with light and power, and finally, a municipally owned natural gas, electric station that supplies current for the street lights and light and power to the municipally owned water-pumping station and the public buildings. There are also small electric companies operating in Whitesboro and Gardner. The one in Whitesboro is owned by the same men who own the street railway. The electric lighting plant in Gardner is owned by the municipality.

[1] Including back taxes.

James M. Jordan, the largest stockholder in the Jefferson Electric Company is approached by Edgar Herne, the owner of a majority of the bonds and upwards of 96% of the stock of the electric railway, who suggests the formation of a consolidation to acquire and operate all the public utilities in Jefferson, Whitesboro, and Gardner, except the municipally owned water supply companies. Herne had previously secured an option on the municipal lighting and power plant of Jefferson for $100,000 carrying with it an equable contract between the city and the purchasers for supplying the city lighting and power. Herne had secured, also, an option on the Gardner municipal electric plant, doing both municipal and commercial business; this required $25,000 in money, provided the purchasers will supply 24-hour service in Gardner at the same rates as should be at any time charged in Jefferson. The service had theretofore been poor and expensive; the plant was antiquated and costly to maintain.

The following represent the chief operating and financial statistics:

	Jefferson Electric Company	Jefferson Railroad Company	Jefferson Gas Company	Whitesboro Lighting Company
Financial				
Bonds	$612,000 (5%)	$ 500,000 (5%)	$200,000 (5%)	$64,000 (4½%)
Notes	400,000 (6%)	300,000 (7%)	.....	.....
Preferred Stock	150,000 (6%)	.....	.....	.....
Common Stock	550,000	1,000,000	200,000	100,000
Operating—Average for Five Preceding Years—(even 000)				
Gross Revenue	184,000	211,000	165,000	24,000
Operating Expense	118,000	171,000	120,000	16,000
Net Earnings	66,000	40,000	45,000	8,000
Bond Interest	24,000	25,000	10,000	3,000
Note Interest	6,000	8,000	.....	.....
Dividends	.....	.....	20,000	.....
Preceding Year				
Gross Revenue	216,000	206,000	185,000	27,000
Operating Expenses	144,000	180,000	142,000	23,000
Net Earnings	72,000	26,000	43,000	4,000
Bond Interest	31,000	25,000	10,000	3,000
Note Interest	16,000	21,000	.....	.....
Dividends	.....	.....	20,000	.....

There were no accounts kept for the municipal plant at Jefferson. It had cost originally, 12 years before, $117,000. No depreciation had been charged.

The municipal plant at Gardner collected $31,000 in commercial revenue, during the preceding year, and no charge was allocated to the town. It cost to operate $47,000.

Herne wanted to form a general consolidation. Jordan refused, alleging that a general consolidation of all the properties would destroy the old and valuable franchise rights of the Jefferson Electric Company. This, however, was not his real reason. Finally, Herne consented to the organization of a holding company, to be incorporated under Delaware laws, to hold the stocks of the operating companies.

What was probably Jordan's real reason for refusing to co-operate in the organization of a direct consolidation? Prepare the financial plan of the holding company, indicate the equable means for acquiring the operating subsidiaries and, finally, prepare letters to go to the security holders of the Jefferson Electric, Jefferson Gas, and Jefferson Railroad Companies and the Whitesboro Electric Company.

Problem LVIII

Organization of the Interstate Lighting and Service Company

Edward Blake was born in Stoughton, Massachusetts, in 1876. After having been graduated at the high school, he entered the Massachusetts Institute of Technology, earning his way through by working for the local telephone company and by the aid of scholarships. He was graduated second in his special study of electrical engineering. In 1900 he went to Schenectady in the employ of the General Electric Company. In 1905 he became Superintendent of their small motor assembling room; in 1907 he left the employ of the General Electric Company to become Superintendent of Construction for one of the largest of the American Light and Traction subsidiaries. In 1911 he resigned from the employment of Emerson Macmillan, and became a construction engineer with the American Gas and Electric Company. In 1915 James L. Brewster and Company, bankers in Boston, received a report from a local correspondent in Canton, Ohio, that a young engineer with a good record had secured the financial backing of James Eustis, owner of a large machine shop, in his project to

acquire a group of small widely separated utilities to be operated under one management. Brewster had been a member of 5 or 6 syndicates for the sale of holding company securities, all of which had turned out very profitably. His firm, lured by these profits, was then planning to organize a holding company, but was at a loss to know how to go about it.

On receipt of the report from Canton, Nathan Miles, the junior member of the partnership, went to Canton, interviewed Blake and arranged that he should come to Boston immediately with complete details of all the work he had done in connection with his projected holding company.

After investigation, the Brewster firm agreed to back Blake in his undertaking; provided Blake showed that the properties he should acquire warranted financial support by reason of their inherent earning capacity and the probable future development of the communities they served.

Brewster laid down the following principles as the conditions to govern Blake in the acquisition of the options:

1. The localities served must show substantial increase in population from 1900 to 1910.
2. The communities must be progressive and public spirited.
3. The franchise situation must be sound.
4. The prices to be paid for the properties must include all the securities and debts, so that the bonds to be issued upon them and sold by Brewster should be absolute first liens, that is, there should remain no outstanding underlying liens.
5. The net earnings of the properties during the preceding year should be at least 12% of the total cash price to be paid. And the improvements necessarily made during the first year should increase, in the judgment of Blake, the net earnings during the second year by at least 15% of their cost.

The Brewster firm laid down no other imperative conditions, except that they recommended that Blake limit himself to electric light and power properties, and suggested that no southern or far western companies be acquired until after Blake had built up an operating organization.

Blake spent the summer of 1913 traveling about the country investigating electric properties. On September 18, he reported concerning 6 small companies. The following represents an abbreviated outline of his report.

Hudson, Ohio. County seat. About 8,100 inhabitants. Condensed milk factory. Distributing center of a large and rich agricultural section. Population shows slight increase. Deposits in local banks doubled from 1905 to 1912. Local board of trade have recently completed arrangements

enabling a large evaporated milk company to build a factory here. Citizens are donating the site and exempting company from local taxation for period of 7 years. Plant will employ 500 men and women.

Electric light plant antiquated. Three upright boilers, belt and shaft connection with one 100 k. v. a. generator and two Westinghouse 250 k.w.—2200 v. Distributing system good. Customers concentrated, ample transformer capacity, and large secondary.

Outskirts of town not served. $16,000 should be spent on extending distributing system immediately. Within a year new boilers and a steam turbine should be installed, at cost of at least $40,000.

Marysboro, Ohio. Important agricultural center north of Columbus; about 4,000 inhabitants. Three small manufacturing units. A fourth has just moved its plant away from Marysboro on account of labor shortage, poor power and dissatisfaction with the C. C. C. and St. Louis on account of l. c. l. rates on its finished product. Very great wealth among the surrounding farmers. Large proportion of inhabitants represent retired farmers who have "moved to town." Sleepy atmosphere; place requires an energetic board of trade.

Electric light plant consists of 3 antiquated, inefficient upright boilers. There is a fourth boiler which the local manager called "reserve," which might be fired provided it was sufficiently "doctored up." One excellent, belt-connected 500 k.w. Westinghouse generator. One 250 G.E. unit, apparently about 6 years old, which the manager said had been bought second-hand. Two 100 k.v.a. machines, evidently rebuilt, which manager said had not been run for 2 years.

There is an artificial ice plant in the same building. Manager said there was a profitable demand for at least twice the ice capacity of the plant during summer. Storage facilities very limited. Considering, however, the inefficiency of the boilers, it is unquestionably true that the ice business is not as profitable as accounts seemed to indicate. Could be made a profitable business provided new boilers installed and the storage capacity at least doubled.

Distributing system fair. Business well developed. Some new business could be secured by running line to Petoria, a small railroad junction point to the north.

Only imperative improvement would be new boilers; cost about $15,000.

Cory, West Virginia. Railroad and mining center; 9,000 inhabitants. Town overgrown. Population largely foreign born, ignorant, receiving excellent wages. Retail liquor sales, according to bank report, $165,000 last year. Schools poor; attendance poor.

Company already distributes electricity to Argentine, across the river, and to 4 large coal mines just back of Argentine.

Company has a thoroughly modern plant on bank of river, to which coal is conveyed by gravity, overhead trolley conveyer from mouth of coal mine 125 yards distant. Very favorable coal contract; 65 cents delivered to the company's bunkers. Equipment consists of 4 horizontal tubular boilers, superheater, one 750 k.w. G. E. turbine, installed 4 months before, two 500 k.w. Westinghouse units belt driven from somewhat antiquated steam engine. These were held as reserve until last April, but now used to carry load during daytime. Company now installing one 1,500 k.w. G. E. turbine. Within a year must add 2 new boilers at expense of at least $25,000.

Electricity supplied chiefly to coal mines at 2,200 v. Load factor unusually good. Company makes little effort to develop domestic business and little secondary.

Summit, Maryland. About 14 miles west of Baltimore. Town of 4,000 inhabitants; only industry, 2 large cotton duck mills belong to a "trust" apparently always in financial difficulties. Labor poorly paid. Mills themselves obtain part of their power from their own water power development, part from 2 antiquated steam plants. During last 3 years have been buying an increasing proportion of power from electric company. Always in arrears on power bills. Twice in the last year the electric company pulled the cotton mill switch because of non-payment of power bills. Once filed attachment on cotton in warehouse. Bills always finally paid, but situation annoying and likely to lead to trouble.

Electric company has modern hydroelectric development 4 miles back of town. This generates all electricity needed during 7 months of year. During 3 of remaining months an antiquated steam station is used while the cotton mills are in operation. During the remaining 2 months the steam station supplies from ½ to ⅔ the electricity required and is taxed to the utmost. Company now negotiating a contract with the Consolidated interests of Baltimore to enable it to purchase auxiliary current. If this contract is consummated, probably advisable to scrap the steam station. Cost of transmission line, 13,000 v., to the Consolidated substation $27,000. Scrap value of steam station probably $8,000. Distributing system ample. No extensions need be built for a year at least.

Hamilton, New York. Main line New York Central, Albany to Buffalo, 7,000 inhabitants. Very little manufacturing, except local milk powder factory and cheese factory. These inefficient and managed largely by farmers. Located in center of very prosperous and rich dairying country.

Farmers rich and not very progressive. Electric light company allowed to go to seed. Chief, if not only, stockholder lives in Jamestown and takes no interest whatever in company. Owns and operates a small factory for the manufacture of mahogany furniture; this has been a losing proposition and has required all his time and attention. Would sell out the entire electric light plant free from all debt, provided cash is forthcoming within 30 days. Plant consists of 3 small horizontal boilers. Two utterly unfit, and insurance will not be available after the first of year. Plant has some old d. c. generating machinery. On the whole, plant so inefficient and badly located that would not pay to patch up. The transmission line of a large hydroelectric company runs within 30 miles. On the way are 3 small hamlets, without electric service and one town of 1,500 inhabitants, having a locally owned electric light company which generates by a gas engine. No option on this company, but current could be sold to it at wholesale. Cost of transmission line, including right of way transformers and substation, $92,000. The hydroelectric company will loan half of the cost, provided the loan is secured by a specific lien on the transmission line.

Distributing system in town poor. About $11,000 should be expended on it immediately. About half the houses are wired. Few appliances used. Bank deposits nearly 3 times the average per capita for rural New York. Few families moving into the town. Population shows 4% increase from 1900 to 1910. Rate less than that now.

Situsville, Pennsylvania. Seventy-five hundred inhabitants. In center of original oil fields. Served by branch lines of the Pennsylvania and New York Central. Several oil refineries, 2 steel mills, and 4 or 5 smaller industries. Served by natural gas. City has its own electric station and owns and operates the street lighting.

Plant consists of series of gas engines, of an aggregate of 450 k.w. capacity. Gas purchased at 21 cents per M. Switchboard cost very low, only about 78 cents per k.w.h. including repairs to engines but without depreciation. Load factor fair. Could be very much improved if company could install at least 250 k.w. additional generating capacity and supply the largest of the steel mills, operating 24 hours a day, with power. Improvement would cost $12,000. Steel company will pay a flat energy charge of 1.7 cents for a minimum of 750,000 k.w.h. for the first year. Steel mill would pay for its own line to the company's switchboard, but would have to be assured of adequate available power.

Large number of domestic customers. Town has unusually large proportion of wealthy men; fathers or grandfathers made fortunes at time of early exploitation of oil industry. Second and third generation live in

	Hudson	Marysboro	Cory	Summit	Hamilton	Situsville
Bonds	$100,000 (6%)	$ 25,000 (5%)	$629,000 (5%)	$150,000 (6%)	.....	$90,000 (5%)
Notes	.....	15,000 (6%)	.....	35,000 (6%)	.....	20,000 (4%)
Stock						
Preferred	.....	.....	75,000 (6%)	.....	.....	.....
Common	245,000	200,000	500,000	300,000	$200,000	200,000
Plant Account	371,000	185,000	810,000	290,000	285,000	131,000
Depreciation	27,000	.....	.....	.....	.....	39,000
Number Customers						
Domestic	530	218	784	390	395	614
Small Power	27	9	13	33		42
Large Power	.....	.....	9	2	.....	4
Street Lights	25	15	31	16	19	48
Earnings: Average						
Three Year, Gross	68,000	31,000	101,000	78,000	41,000	87,000
Operating (incl. taxes)	33,000	18,000	54,000	42,000	30,000	64,000
Preceding Year						
Gross	72,500	33,000	181,000	83,000	46,000	93,000
Operating (inc. taxes)	34,500	21,000	89,000	47,000	38,000	72,000
Price of Option (including detail of terms)	(a)	(b)	(c)	(d)	$ 75,000	(e)

(a) $70 a share for common stock. Stockholders would agree to deliver bond issue at not over 96 for entire issue. Company has $31,000 in treasury and owes nothing on current bills except $525 on supplies not yet delivered.

(b) $25 a share for common stock and par for notes. A few of the bonds might have to be called at 105%. Option on $11,000 at 84.

(c) Par for bonds and preferred stock—less 3% discount on entire amount if money paid before Nov. 15. All but 100 shares of common stock thrown in. This would cost at most $25 a share.

(d) $30 a share for common stock, par for notes. Most of bonds would have to be obtained by calling issue at 103. Perhaps a ¼ to ⅓ might be bought at par.

(e) The 4% bonds mature in 4 years. Par would have to be paid for them if bought. Owners agree to supply all the 5% bonds for 90. They will take either $50 a share for stock or take $65 in 5% new bonds of holding company, if such are issued.

large, ostentatious houses on hill to northwest of town. Some public-spirited men among this class, but majority spend considerable portions of year away and are inclined to forget Situsville and oil.

The financial and operating statistics of these 6 companies are given in tabular form on the preceding page.

After careful consideration James L. Brewster and Company arranged to acquire 5 of the properties held by Blake under option, but rejected the sixth because least desirable. Which was it and why?

Prepare a financial plan for the Interstate Lighting and Service Company, and a brief descriptive circular such as might be submitted to investors.

Part V—Reorganization of Corporations

Problem LIX

The Sunboro and Eastern Pennsylvania Railroad Reorganization
(Names, figures and places altered)

The Sunboro and Eastern Pennsylvania Railroad passed into the hands of receivers on August 10, 1914. The road had been suffering from a combination of maladies for a period of over 7 years. During this time the gross earnings had risen from $7,614,000 to $12,143,000, while the operating expenses had risen from $5,396,000 to $11,134,000. The experience of these 7 years may be seen at a glance from the following tables:

YEAR ENDING JUNE 30
(000 OMITTED)

	1908	1909	1910	1911	1912	1913	1914
Gross Earnings	$7,614	$8,713	$9,112	$11,318	$10,792	$11,516	$12,143
Maintenance	2,403	2,617	2,319	2,732	3,019	2,991	2,711
Other Operating Expenses, including Taxes	2,993	3,380	4,176	6,515	6,007	7,166	8,423
Total Operating Expenses	5,396	5,997	6,495	9,247	9,028	10,157	11,134
Net	2,218	2,716	2,617	2,071	1,764	1,359	1,009
Interest Charges	1,015	1,015	1,015	910	970	1,030	1,030
Operating Ratio	71%	69%	72%	82%	84%	88%	92%

At the time of the failure, August 10, 1914, there were outstanding the following funded liabilities:

1. Sunboro and Harrisfield first mortgage 7's. Issued 1880, due in 1910 and extended at 5% to 1960. A first mortgage on the main line extending between the two terminals of the railroad, 264 miles. $6,738,000 outstanding. Mortgage closed.

2. Sunboro and Harrisfield, second mortgage 6's. Issued in 1885, due in 1945. $1,816,000 outstanding. Mortgage closed. Secured by the same property as the first mortgage 7's but junior to it.

3. Dobbinsville Division. First 6's. Issued in 1891, due in 1921. A first mortgage on the branch line from Mason Junction to Hartford's, 68 miles. $710,000 outstanding. Mortgage closed. This branch reaches important coal properties, and originates about 69% of the coal traffic of the road. The total coal traffic represents about 53% of ton miles handled by the road.

4. Sunboro and Eastern Pennsylvania Railroad first mortgage 5% gold bonds. Issued in 1898 and due in 1938. A lien on 687 miles of line subject to the two preceding issues on the main line and to the Dobbinsville divisional bonds. $5,750,000 outstanding. Mortgage closed.

5. Sunboro and Eastern Pennsylvania Railroad general mortgage 5% bonds. Secured by the same property as the preceding (first mortgage 5's) but subject thereto. $10,000,000 authorized, $2,685,000 outstanding. Issued in 1903 and due in 1953.

6. Debentures. $2,000,000 6's. Issued in 1912, due in 1922.

7. There were outstanding $1,260,000 of 4% equipment obligations. The amount was originally $1,800,000 issued in 1911 to purchase approximately $2,000,000 of steel coal cars. The contract, issued under the Philadelphia plan, with the Ferrard Trust Company, owner and lessor, called for annual installment payments of $180,000. These had been met regularly. The interest on the outstanding certificates had been regularly charged to operating expenses.

In addition the company had the following obligations outstanding:

Merchandise debts contracted before February 10, 1914, $773,000.

Current merchandise debts contracted since February 10, 1914, $216,000.

Current pay-roll, salary and other labor charges, $69,000.

Bank loans maturing before September 1, 1914, $100,000.

Bank loans maturing before January 1, 1915, $60,000.

Bank loans maturing after January 1, 1915, none.

The stock issues were represented by $5,000,000 6% non-cumulative preferred and $5,000,000 common stock.

On August 25, 1914, the receiver obtained permission to issue $500,000 par value 2-year 6% receivers' certificates, ranking, prior to the Sunboro and Eastern Pennsylvania general mortgage bonds. These were sold for 98 to banks and the proceeds used to pay the current merchandise bills of $216,000 and the unpaid pay-roll of $69,000. The remainder was expended

during the next 8 months in repairs, betterments, and general improvements.

Another issue of $180,000 was made in February, 1915, in order to meet the annual instalment on the equipment trust obligations.

The receivers report for the year ending June, 1915, showed the following:

Gross Earnings	$11,978,000
Maintenance	5,112,000
Other Operating Expenses Including Taxes	6,224,000
Net Earnings	642,000

The receiver admitted in his report to the general reorganization committee that at least 35% of the maintenance charges were extraordinary due to the previous protracted period of under-maintenance.

It was also clear that the falling off of gross earnings was due to the depression consequent upon the Great War. During the 6 months of the year from June 30 to December 31, 1914, the gross earnings had been approximately $4,800,000, in comparison with approximately $7,100,000 for the last 6 months of the fiscal year. The receiver reported that, because of previous liberal charges to maintenance, he was able to show a net operating ratio for the 4 months from May 1, 1915 to August 31, 1915 of 7% below that of the fiscal year ending June 30, 1914.

In September, 1915, the General Reorganization Committee prepared a plan of reorganization.

What plan would you suggest?

GENERAL COMMENT AND SOLUTION

Past History

From an inspection of the earnings and statements of the Sunboro and Eastern Pennsylvania Railroad from 1908 to 1914 three things are obvious:

1. The road has not obtained a normal increase in gross earnings. The year ending June 30, 1908 was a year of depressed railroad earnings following the monetary panic of the autumn of 1907. The steady increase in gross earnings from 1908 through 1911 is therefore readily understandable, perfectly normal, and not indicative of either remarkable prosperity or able management. But from 1911 through 1914 the gross earnings were stationary. The railroad, operating in the thickly settled sections of the eastern states, should have shown a steady and uninterrupted increase in gross earnings. The fair presumption, therefore, is that the road, by

reason of inefficient management, was losing business to its competitors.

2. The total operating expenses and operating ratio have both increased relatively and absolutely. In 1908 the total operating expenses were $5,400,000 out of a total gross of $7,600,000 or a ratio of 71%. This ratio remained relatively constant for the next 3 years; it then rose steadily so that in 1914 the total operating expenses absorbed 92% of the total gross earnings. Obviously the increase in cost of operation was all out of proportion to the increase in gross earnings. Should the same relative increases continue, the costs of operation would presently exceed the total receipts of the road.

3. Although the total operating expenses have increased relatively and absolutely, the maintenance component of the operating expenses has decreased. This is easily observable from a few comparisons.

	1908	1911	1914
Total Gross	$7,614,000	$11,318,000	$12,143,000
Total Maintenance	2,403,000	2,732,000	2,711,000
Total Operating Expenses	5,396,000	9,247,000	11,134,000
Percentage of Maintenance to Gross	32%	24%	22%
Percentage of Maintenance to Total Operating Expenses	45%	30%	25%

Clearly, and without question, the management had been spending much less comparatively in the up-keep of the road. Had the same relative proportion of gross earnings been expended in 1914 for maintenance as in 1908, the 1914 maintenance charges would have been over $3,880,000 and the total operating costs would have exceeded the gross earnings.

The Basis of the Reorganization

Clearly then the reorganization must be a drastic one. It must provide at least $680,000 in money with which to pay off the receivers certificates and should provide, in addition, some money to improve further the physical condition of the road. It would be well, also, to secure the money requisite to meet the instalment due in February, 1916, on the equipment certificates. Some, at least, of the expenses of the reorganization would have to be met in money. Altogether $1,000,000 should be secured.

The second requisite of any reorganization plan would be a reduction in the fixed charges. According to the statements of the company the

railroad had succeeded in earning its fixed charges during all the years except the one immediately preceding the receivership. Yet, by analyzing the decrease—absolute and relative—of the maintenance charges, it is obvious that this apparent solvency was due to marked failure to maintain adequately the physical condition of the road.

During the year of receivership, when the charges to maintenance were clearly and admittedly over-liberal, the purpose of the receivership being to make up for the delinquencies of the past, the road showed net earnings of $640,000. The interest charges on the two underlying main line bond issues required $445,860. It is obvious therefore that these two issues cannot be disturbed, or if they are disturbed new securities equal in value and attractiveness must be given to the old holders. The balance of earnings over these underlying charges is about $200,000. The interest on the Dobbinsville branch bonds amounts to $42,600. This branch is very important to the present organization of the Sunboro and Eastern Pennsylvania Railroad. The operating and financial structure of the road had been, during the preceding 4 or 5 years, recast so as to accommodate a large coal traffic. A very large proportion of this traffic originated on the Dobbinsville branch. It would be, therefore, a very serious mistake to jeopardize the ownership or control of this branch as a result of an attempt to disturb the small issue of $710,000 first mortgage bonds, with interest charges of only $42,600.

The two underlying main line, and the Dobbinsville branch bonds absorb $488,460 of the $642,000 available earnings. This would leave earnings of only about $153,000 with which to meet the interest on the Sunboro and Eastern first mortgage 5's. This interest amounted to $287,500. On this showing it is obvious that all the junior mortgage and debenture bondholders must be prepared to endure some sacrifice, both in lien on income and on the "corpus" or property of the road.

Furthermore, the money required by the reorganization, $1,000,000 in cash, must be obtained from the junior security holders, presumably the stockholders. So that the crux of the problem of the reorganization becomes a kind of "give and take" between the junior bondholders and the stockholders.

The Plan

One of two plans might be adopted. Either all the security holders, including the owners of the underlying bonds, might agree to a thorough and comprehensive reorganization in which an entirely new and much simplified financial structure would be created out of the old one, or the

holders of junior securities might decide upon a reorganization in which only the junior securities would be disturbed, the underlying bonds to remain as they are. The former alternative would require the consent and active co-operation of the senior bondholders—and therefore would be more difficult to execute—but it would at the same time produce a more permanent and stable financial structure. The second alternative would be quicker, easier, and less expensive to execute; it would, however, merely ameliorate the present distress without effecting a thorough and abiding cure. The decision would, in the end, rest with the senior bondholders. If they were well organized and showed a willingness to co-operate, it would be wise financial policy to effect a general reorganization involving the refunding of all the securities; if they were scattered, unorganized, and showed little interest in the fortunes of the road, it would be foolish to do more than fund the current debt and reduce the charges on the junior bonds.

We will assume, for purposes of argument and discussion, that the active co-operation of the senior bondholders can be gained and that all parties concerned desire a comprehensive reorganization. To this end, the following securities are created:

1. First mortgage 5% bonds, a first and only lien on the entire mileage and equipment of the Sunboro and Eastern Pennsylvania Railway, subject only to the lien of the equipment certificates on certain of the rolling stock. Due in 1960. Authorized $20,000,000. Issued $11,564,000. The unauthorized balance to be issued only for the actual cash cost of improvements and then only when the net earnings are twice the interest charges on the entire outstanding first mortgage bonds, issued and to be issued.

2. Preferred stock 6% non-cumulative. Protected by a provision which prevents the further issue of preferred stock without the consent of 75% of the outstanding preferred stock. Authorized and issued $10,797,900.

3. Common stock. Authorized and issued $10,846,500. Exchange of the old securities into the new securities. Basis as indicated in the table.

Discussion of Plan

It has been said already that the 2 underlying mortgage liens of the Sunboro and Harrisfield must be fully protected. In the plan just outlined the two bond issues are given the same consideration. This is just. The 5's represent a closed prior lien on the whole property. They are given a bonus of 10% in the new preferred stock as an inducement to accept bonds issued under a new open general mortgage covering the entire property. The new bonds will be more easily marketable than the old bonds, but not as secure. The fixed interest return will be the same, but in

Old Security	Amount	Assessment to be Paid		New Securities				Common Stock	
				First Mortgage Bonds		Preferred Stock			
		%	Amount	%	Amount	%	Amount	%	Amount
S. and H. 1st	$ 6,738,000	..	.....	100	$ 6,738,000	10	$ 673,800	..	.....
S. and H. 2nd	1,816,000	..	.....	100	1,816,000	10	181,600	..	.....
Dobbinsville	710,000	..	.....	100	710,000	..	.....	10	$ 71,000
S. and E. 1st	5,750,000	..	.....	40	2,300,000	80	4,600,000	..	.....
S. and E. Gen.	2,685,000	..	.....	..	.....	50	1,342,500	50	1,342,500
Debentures	2,000,000	..	.....	..	.....	..	.....	100	2,000,000
Old Debts	773,000	..	.....	..	.....	..	.....	100	773,000
Bank Loans	160,000	..	.....	..	.....	..	.....	100	160,000
Preferred Stock	5,000,000	10	$ 500,000	..	.....	70	3,500,000	30	1,500,000
Common Stock	5,000,000	10	500,000	..	.....	10	500,000	100	5,000,000
Totals	$30,632,000		$1,000,000		$11,564,000		$10,797,900		$10,846,500

addition—through the bonus of preferred stock—the holders are given an opportunity to share in the future prosperity of the road. If the road continues a failure the new bonds will not, probably, command a market below the old bonds; if it is a success the market value of the new bonds together with the preferred stock bonus will be greater than that of the old bonds. The holders will have, therefore, something to gain, and nothing to lose by the exchange.

The same policy is pursued regarding the second mortgage 6's. They represent a small second closed lien on the main line, so that their security is a little less—but only a little less—than the first mortgage 5's. The slightly less security is fully compensated for by the 1 per cent greater income return. For purposes of exchange therefore the two issues are regarded as of the same intrinsic value.

The Dobbinsville branch bonds occupy a very strong strategic position in the whole financial structure. As organized, the loss of the branch would do great injury to the road; and the bondholders, were they allowed to foreclose and take the property for themselves, could easily make a satisfactory operating or traffic agreement with some other road, owing to the large volume of coal carriage which originates on their line. On the other hand the bonds represent a small, practically unmarketable issue. Under any circumstances they would be poor collateral at the banks. They mature in 5 years, so that the holder, in exchanging them for new 5% bonds would lose at most 1% a year or 5% in all. Considering that the security of the new first 5's, covering the entire road, is equal to that of these branch line bonds, while the former have greater market-ability, we may properly assume that a bonus of 10% of new common stock fully compensates for a loss of 1% in income for a period of five years.

By reference to the earnings of the road under the receiver it is obvious that interest charges on the $5,750,000 Sunboro and Eastern first 5's were not earned. (Earnings available after charges on the underlying bond issues [even 000], $153,000, interest on the first 5's, $287,500.) Yet the receiver admits that 35% of the maintenance charges, or $1,789,000, were abnormal. If even a small proportion of these maintenance charges had been capitalized the interest of the Sunboro and Eastern first 5's would have been fully earned. Reasonable precaution dictates, therefore, that part of the charges on this issue shall be made contingent, yet the bondholders would feel, justly perhaps, that they should not be called upon to make any real sacrifice. This predicament would be settled by giving these bondholders new bonds carrying fixed charges of $115,000 (40% of new first 5's or $20 for each $1000 old bond, 2%) or nearly the balance of earn-

ings available under the receiver's earning statement, together with a very liberal bonus of new preferred stock. They would, therefore, be in a position to receive the full available earnings if the road made no improvement, but if the earnings were liberal they would receive an additional contingent income of $276,000 (80% of new preferred stock or $48 for each $1000 old bond—4.8%). This, with the fixed income, would give them 6.8% instead of 5%.

In other words, they endure a reduction in fixed income, but are compensated by an increase in fixed and contingent income.

The efforts to meet the interest charges on the general mortgage 5's and the debentures precipitated the failure. The only way of safeguarding the reorganized road from a reoccurence of the same misfortune is to eliminate entirely the fixed charges. This must be done, whatever else is accomplished by the reorganization. But obviously the general mortgage bonds are in a stronger position than the debentures—hence the former are given part preferred stock, and part common, while the latter are given only common stock. The unfunded debt, both the merchandise and the bank loans, are considered on the same level as the debentures.

It is necessary to raise $1,000,000. The preferred stockholders cannot be relied upon to come to the rescue of the failed road any more or any less than the common shareholders. The burden of raising the new money is therefore distributed evenly among all the stockholders. The preferred stockholders, in deference to their position, are given new preferred stock for part of their old preferred, whereas the common shareholders are given new preferred only for the par value of their assessment.

A comparison of the old and the new corporation is seen from the following table:

	Old Company	New Corporation
Total Capitalization Including Unfunded Debt, but not Undisturbed Equipment Obligations	$30,632,000	$33,208,400
Fixed Charge Securities	19,699,000	11,564,000
Fixed Charges not Counting Unfunded Debt	1,030,210	578,200
Fixed and Contingent Charges	1,330,210	1,226,074

It is obvious from this table that the reorganization has accomplished a distinct reduction in the fixed charges; in fact the fixed charges are below the earnings during the poorest period of the receivership, when the business was suffering from a general depression and when the receiver had, admittedly, increased the normal maintenance by over $1,000,000. The fixed charges were, in fact, only a little over half the net earnings of the year just prior to the failure. In addition to a reduction in fixed charges the reorganization had brought about a distinct simplification of the financial structure, and had secured a permanent cancellation of the floating debt and a considerable contribution of new money.

Alternative Plan

A part, at least, of the refunding operations of this plan depends upon the willingness of the holders of the underlying bonds to exchange them for new bonds. If these holders refuse to co-operate, or if they exact too high an inducement, the plan would have to be consummated without their help. In that case the 3 underlying issues need not be disturbed. Such a plan would not bring about so great a simplification in financial structure, but there would be nearly as great a reduction in fixed charges. At all events the first mortgage bonds of the Sunboro and Eastern and all bonds and unfunded debt below these should be changed from a fixed to a contingent charge security. In actual practice this would be accomplished through a foreclosure of the Sunboro and Eastern first mortgage 5's, which would extinguish the general mortgage bonds and all junior securities.

Problem LX

The Ingalls Slipper Company Failure

Andrew Stevens, a shoe salesman, and Peter Dobell an expert fitting room superintendent, formed a partnership in Haverhill, Massachusetts, in 1911, to manufacture ladies' fancy slippers. They were backed, in the beginning by Edward Lawton, a capitalist, who had married Stevens' cousin. He loaned $5,000 to Stevens, personally; and loaned $20,000 to the partnership of Stevens and Dobell. Dobell contributed $5,000 of his own money. At the end of 1911, the business not having been as successful as Stevens had painted, Lawton sought to withdraw his capital. This created ill feeling between Lawton and Stevens, resulting finally in an

agreement between the two under which Lawton agreed to cancel his personal loan of $5,000 to Stevens and his loan to the partnership of $20,000 on payment of $22,000 in money. Stevens agreed. He secured the co-operation of Thomas Ingalls, a retired shoe manufacturer of Lynn, who made the following proposition: The Ingalls Slipper Company was to be organized with $100,000 capital stock. Ingalls would settle with Stevens at the figure mentioned, and pay into the corporation $25,000 more. Of the $100,000, $10,000 par value was to go to Dobell, $10,000 to Stevens, and the remainder to Ingalls. The latter was to become president and treasurer of the company, Stevens, vice president and sales manager, and Dobell, factory superintendent. This was done.

The business became, almost immediately, very successful. The Company specialized in the manufacture of a simple, cheap slipper, wholesaling for about 40 cents a pair. The plan was to make a small profit on a large turnover. By the end of 1913 the company, by the reinvestment of its profits, had increased its net worth to $165,000. Meanwhile the company had purchased a factory at a cost of $200,000, the lower floors of which it leased to tenants and carried on its business in the loft, with a shipping room in the basement. Ten thousand dollars only had been paid down, a savings bank had taken a first mortgage of $100,000 on the building and the remaining payment had been met by giving the company's 1-year note for $90,000, secured by a second lien-mortgage on the building. This note ran one year from August 1, 1913.

During the spring of 1914 the demand for slippers from jobbers was excellent and the business was as profitable as in the previous years. The company bought only enough leather and materials for its immediate needs, so that a minimum of capital was tied up in its inventories. Its greatest weakness was in the collection of its accounts receivable. Owing to the large volume of business undertaken by the company and relatively long credits, there was always a shortage of liquid capital. The company had received liberal accommodation from the Haverhill banks and had opened a $100,000 line of credit with the Importers' National Bank of Boston. This required an average deposit of $20,000. It had been the intention of Ingalls, the treasurer, to gradually transfer his entire borrowings to the Boston bank. In April, 1914, owing to an unfortunate sale to a Porto Rican distributor in the autumn of 1913, the firm found itself at a great loss for want of ready capital. Ingalls did not dare infringe upon his customary deposit of $20,000 at the Importers' National in view of his proposed policy of increasing his loans there. He could not, on the basis of his present borrowings in the Haverhill banks, reduce his deposits there.

As a last resort he began to "sell" his accounts receivable. This process consisted in borrowing up to 80% of the par value of certain of his accounts. For this accommodation the Manufacturers' Finance Corporation would charge a fee or fees which, in the aggregate amounted to an interest rate of nearly 14% per annum on the actual money borrowed. Meanwhile it tied up the accounts. In his reports to the Importers' National Bank and to the local banks the fact that specific accounts receivable were pledged to the Manufacturers' Finance Corporation was entirely omitted, although the loans themselves were included under bills payable.

The indebtedness on the accounts receivable tended to increase during May and June, due largely to the increasing volume of business. Business was unusually brisk during July, but collections were slow. Ingalls, a narrow-minded man who knew little outside of the shoe business, was oblivious to the foreign situation. The seriousness of this burst suddenly into his consciousness on the evening of July 25. Conditions were conspicuously unfavorable for him. He had told the Merrimac National Bank the day before that he intended to meet a note of $25,000 due August 1, expecting to transfer this obligation to the Importers'. On the strength of this expectation he had drawn down his account at the Merrimac to less than $1,000. To make matters worse, he had bought a lot of cut soles, costing $9,387 at a special price provided he should pay cash for them. The soles were to be delivered August 2.

Now fully conscious of the impending crisis in world finance, he called on the morning of July 27, on James M. Costigan, the President of the Importers'. He went over his whole situation with him. The interview was cordial and friendly. Costigan promised to "take care of him"; he promised even to increase his aggregate loans to $150,000, were it necessary, provided the current condition of his business warranted the credit. Nothing was said about the relations with the Manufacturers' Finance Corporation. Ingalls felt reassured.

Costigan immediately asked a special Dun report on the Ingalls Company. It reached him August 1, and disclosed the account with the Manufacturers' Finance Corporation. He immediately telephoned for Ingalls to come to Boston for a conference. The latter inferred that Costigan was alarmed over the sudden burst of war and wished to ascertain how the Ingalls' affairs stood. Instead, he was asked, in very direct terms, to explain his relations with the Manufacturers' Finance Corporation. Ingalls hesitated but finally admitted that he had specifically pledged certain of his amounts. Costigan then told him to close his account with the bank within 10 days. Three days later, a non-resident creditor, a friend of

Ingalls, petitioned for the appointment of a receiver. Auditors reported as follows:

Assets		*Liabilities*	
Building, 20 Merrimac St.	$200,000	Capital Stock.....	$100,000
Machinery Owned.....	11,000	Mortgage on Building....	100,000
Leather and Findings....	97,684	Second Mortgage.....	90,000
Merchandise Finished and in Process.....	27,719	Manufacturers' Finance Corporation.....	38,926
Accounts Receivable.....	216,817	Importers' National.....	98,000
Cash.....	26,741	Haverhill Banks.....	17,000
		Merchandise Debts.....	117,610
		Accrued Interest on Mortgage and Note.....	2,794
		Surplus.....	15,631
	$579,961		$579,961

Auditors reported that the building was probably worth the first and second mortgages, but would probably sell for no more. It could not be sold then for any price. The machinery had a second-hand value of $4,300 but was ample and sufficiently modern and efficient to use if the business was continued. The leather and findings had a current value of about $42,000. They were necessary were the business continued. At the time, August 15, 1914, there was little demand for slippers or anything else, but the finished goods could probably be sold directly and through jobbers for the cost. The accounts receivable represented the weak point of the business. At least $32,000 listed were valueless. An account of $61,000 with an export jobber, on account of a jobber in Porto Rico was probably of little value. It might realize 10% in the course of another year. $84,000 of the accounts were certainly good. The remainder represented small sales directly to shoe stores, mostly in the South and Southwest. Their value was uncertain. Little could be realized on them immediately on account of the war.

The liability of $38,926 to the Manufacturers' Finance Corporation was specifically secured by $56,811 accounts. Of this amount $41,016 were part of the $84,000 listed as certainly good.

The Receiver was asked by the court to continue the business until January 1, 1915. A reorganization plan was immediately proposed by Ingalls, and accepted by the creditors

What was the plan?

Problem LXI

The Achilles Tire Company

The Achilles Tire Company was organized in 1914 by James Anderson, former sales manager, for the eastern district of the Goodnow Tire and Rubber Company, who contributed $50,000 in cash. He had associated with him Heinrich Meisel, an Austrian, graduate of Bonn University in Chemistry, who had devoted himself to rubber. Meisel contributed $10,000. Also, Edward Burr Reznor, a native of Butler County, Pennsylvania, who had moved up to Akron in the early days of the rubber industry and had made a fortune from his holdings in the old Goodnow Rubber Company when this was recapitalized in 1912 by Wall Street interests, contributed $435,000 in cash.

The Achilles Tire Company was organized with $1,000,000, 7% preferred stock and $1,200,000 common stock. Anderson took $50,000 preferred and $250,000 common. Meisel took $10,000 preferred and $100,000 common. Reznor took $435,000 preferred and $400,000 common. The remainder of the issues were placed in the treasury to be sold later as the new company should require more capital. Before the organization Anderson signed a contract to act as president and general manager of the company with full charge of the purchase of materials and the sales of the product. He was to receive $12,000 a year for a period of 5 years. Meisel agreed to act as vice president. He had complete charge over the factory including every detail of the actual manufacture of the tires. Reznor was to act as treasurer with only nominal duties. He was to receive no salary.

The company was a success from the very beginning. Meisel knew the manufacturing part of the business thoroughly. He loved detail, made a most painstaking study of every batch of tires that came through, invented a new testing machine to discover weak points in the fabric and an altogether new device to prevent buckling while the tire was being wrapped. Achilles tires soon became known all through the East for their uniformity and endurance.

Meanwhile, the business developed into a great financial success. In 1916 the company sold the remainder of its preferred stock to the public at par. Common stock to the amount of 2,500 shares was sold to Akron brokers in 1917 for $96 a share. Banking connections were opened with the Warrentry Trust Company, a large institution in New York which insured a reserve credit of $500,000. Schultz, Eimer and Company, note-brokers, opened an account with them in 1918, and by the end of the year had sold over $600,000 of their paper.

The gross business for 1919 was twice that of 1918. Anderson arranged in the spring of 1919 to finance the Triton mill of Summerville, S. C., agreeing to take its entire outfit of fabric. The Achilles Tire Company acquired its stock, paying $250,000 cash and $250,000 in the 3-year unsecured notes of the Achilles Tire Company. In April, 1920 Anderson was told by a New York broker that the cotton market had passed beyond control and prices for long staple cotton were likely to double by October. Spot "contract" cotton was then quoted at 40 cents a pound. Immediately he bought 1,000,000 pounds of contract cotton, options distributed between July, October, and December. The price averaged 37 cents. He also contracted for 500,000 pounds 1 1/16 inch staple cotton of an especially fine quality with a New Orleans factor for 76 cents a pound. In May he entered into a contract with M. Antigueoras for 100,000 pounds Egyptian cotton at $1.05 a pound delivered at the fumigating station in New York. Deliveries to be taken at the sellers' option between August 1 and October 1. He purchased 1,000 tons of plantation rubber held in a New York warehouse and contracted for 100 tons a month with an exporting house, deliveries to extend from June 1 to January 1.

While Anderson was seeking to protect himself against a "runaway" market for raw cotton and crude rubber, he was taxing his manufacturing capacity to the utmost. The orders had been running far ahead even of 1919, and the unfilled orders from agents and dealers were increasing.

Meisel had a nervous collapse June 8, as a result of overwork, the direct result of attempting to apply detailed, painstaking, efforts to large-scale production without having built up a capable organization. Almost immediately the quality of the tires fell. The returns of blemished tires from dealers were twice as great during June as ever before. Three car loads of tires shipped July 3, to a large New York wholesale accessory house were returned, on the claim that the goods were not equal to the company's best product, on the high quality of which the order had been placed. In accordance with the firm's custom the returns were accepted without question. Meanwhile the cancellations of orders from dealers began to come in in an alarming manner. Anderson immediately reduced the rate of output, so that for the first 2 weeks of July the shipments of tires actually accepted by dealers and agents were about equal to the output of the factory. Meisel's chief assistant, who had assumed charge of the manufacturing was doing better and the proportion of seconds declined, as compared with conditions during June. July 15, Anderson covered on his "spot" undelivered future contracts of "contract" cotton, with a total loss of $61,000.

On July 29, Meisel evaded his attendant and leaped from a third story

window of a sanatorium. He never regained consciousness and died the following morning. Reznor, meanwhile, had been carrying automobile companys' stocks with Lynch and Company in New York on margin. He lost heavily in the decline in the Maxwell shares and was then carrying 10,000 shares of General Motors common, purchased during the autumn of 1919 between $38 and $41 a share; and 5,000 B. F. Goodrich shares, purchased the year before at prices ranging from $74 to $92 a share. In addition he was carrying 15,000 shares of other stocks, all industrials and all showing losses from the purchase prices. August 9, Lynch telephoned him for more margin. He pledged everything he had, even his Liberty bonds, except the stock in the Achilles Tire Company. On Sept. 15 Lynch wired for more margin. General Motors was $20; Goodrich under $60; and nearly all the remainder of the securities in his account had fallen to new low levels. Reznor secured a loan of $300,000 from the Warrentry Trust Company of New York, pledging his entire holdings in the Achilles Tire Company as collateral. This entire amount was handed to Lynch.

The entire management of the business now fell on Anderson, as Reznor, 66 years of age, was incapable of making any decisions in the emergency.

Anderson closed the Triton mill on Sept. 13. All the long staple cotton had been delivered, but none of the Egyptian cotton bought from Antigueoras. About half of the long staple cotton had been woven into fabric at the mill, and the remainder was in the mill's store house. He accepted his contracts on crude rubber, up to Sept. 1, and obtained an option to cancel contracts for the delivery of the September to January crude rubber provided he made a cash payment, on or before October 1, to the exporting house of $65,000. He reduced the tire factory to half time on September 3, and ceased to manufacture on September 20.

Some loans at the local Akron banks were not renewed and Anderson gradually increased his loans at the Warrentry Trust Company until they reached $600,000, a hundred thousand dollars more than the credit originally arranged for. Schultz, Eimer and Company worked loyally for the company and had over $1,000,000 of notes placed among their customers.

When the Warrentry Trust Company heard that the factory was closed they wired Anderson and Reznor to come to New York and bring a full statement of the condition of the business. Reznor refused to go and Anderson went alone. He explained that he had closed the factory so that he might have an opportunity to "work off" his accumulated stock of goods. He stated that the only important immediate matter that would have to be attended to was the Antigueoras contract which, at the current market for Egyptian cotton might show a loss of about $40,000. He said

he had not reduced the prices of his tires below the cost of production and if the banks would extend him not over $100,000 credit more, at the most, he could liquidate his present stock of tires and begin to manufacture again the raw materials he then held. Even if the wholesale prices of tires were reduced materially he thought that these raw materials could be best realized upon in the form of tires. He presented the following statement:

Assets		*Liabilities*	
Tire Plant, Actual Cost Less Depreciation	$1,115,786	Capital Stock Preferred	$1,000,000
Triton Mill, Cost	500,000	Common Issued (Treasury $200,000)	1,000,000
Raw Materials Delivered and Paid for, or in Transit and Paid for, Chiefly Rubber and Long Staple Cotton (Cost)	592,871	Schultz, Eimer and Co. (Account)	1,090,000
		Triton Mill Notes	250,000
		Warrentry Trust Company	600,000
Fabric, Cost of Cotton Plus Manufacturing Cost	296,021	Akron Banks	117,000
		Merchandise Creditors	184,716
Tires, Akron Warehouse and New York (Cost)	307,816	Liability Under Cancellation of Crude Rubber Contract	65,000
Accounts Receivable	318,211	Liability Under the Antigueoras Contract	105,000
Notes of the Triton Mill not Represented by Cotton or Fabric	261,000		
Cash	117,942		
Cotton to be Received Under Antigueoras Contract	105,000		
Good Will Account	750,000		
Stock Discount Account	10,000		
Deficit	37,069		
	$4,411,716		$4,411,716

Anderson reported that the raw materials, inventoried at a cost of $592,871 had a current market value, based on spot cotton and crude plantation rubber, New York delivery, of $218,700. Fabric mills were then quoting fabric prices, immediate delivery, that indicated a value of $119,300 for the item of $296,021. There had not been much of a decline in the wholesale prices of tires but the "demand" at any price was slight. The

accounts were probably 90% good. The Triton mill was one of the best fabric mills for its size in the south. It had actually cost, with the improved machinery, less than two years old, about $650,000. It owned a valuable water power. It had no notes or other liabilities outstanding, other than its notes to the parent company.

A few hours after Anderson had submitted this report to the Warrentry Trust Company, a conference was held attended by Anderson, Aaron Eimer, and a vice president of the trust company. Anderson stated his confidence in his ability to work the situation out, and offered to surrender his stock to a committee of bankers to protect the company's creditors. This plan was acceptable to the vice president of the Warrentry Trust Company, who offered to provide a further credit of $50,000 provided Schultz, Eimer and Company would guarantee an equivalent credit if $100,000 was required before Anderson could liquidate on his inventories. Eimer flatly refused, claiming Reznor had deceived him in stating the company's liabilities as he had said nothing concerning the future contracts in rubber and cotton. He demanded an immediate receivership and the complete elimination of Anderson and Reznor. Reluctantly the Warrentry Trust Company consented, and 3 days later a local Akron lawyer was appointed receiver under a non-resident creditor's bill.

Why was the Warrentry Trust Company opposed to a receivership and Schultz, Eimer and Company in favor of it?

Granting Anderson's statements of his situation were correct, prepare a balance sheet such as auditors for the receiver might present to a creditors' committee.

Prepare a plan of reorganization for the Achilles Tire Company. (The experience of this tire company should be compared with that of the Mayer Manufacturing Company. See problem L page 53.)

Problem LXII

Reorganization of the Jamestown, East Coast and Southern Railway

Main Line of Road	
Jamestown to Dobson	219.3 miles
Huron Branch: Norwalk Junction to Huron	12.4
Warrenton Branch: Warrenton to Jefferson	13.5
Total Length of Line, June 30, 1902	245.2 miles

History: The road was organized July 10, 1886, as a reorganization and consolidation of the old Jamestown and Southern and East Coast Railway. The Warrenton Branch was built in 1887, the Huron in 1889.

Rolling Stock: As of June 30, 1902. Locomotive engines, 61. Cars, passenger, 18. Combination, 6. Baggage and mail, 3. Freight (box 900, platform, 165; stock, 10; coal, 3,964; caboose, 35), total 5,074; service cars, 7—total cars, 5,108.

Central Division Bonds are secured by the main line from Jamestown to Dobson. The Eastern Division bonds are secured by a cut-off on the main line from Jamestown Center through to Rickers.

The first mortgage and extension improvement 5% mortgage bonds are a second mortgage on the Central and Eastern Division and the first mortgage on the Huron Branch.

The third mortgage consolidated bonds are a third mortgage on the Eastern Central Division, second mortgage on the Huron Branch, and a first mortgage on the Warrenton Branch. They are also secured by the deposit with the trustee of certain very valuable traffic agreements covering interchange of traffic at Jamestown and Dobson.

Down to 1899, the road made relatively few advances and improvements, the capitalization remaining essentially the same. In 1899 it embarked on a series of extensions, improvements and financial operations. These involved reduction of expensive grades and curves and the building of a network of small branch lines, leading into coal mines. Until 1899 the road had carried a large proportion of through freight, particularly coal delivered to it by connecting roads. Beginning with 1899 it attempted to develop certain large areas of coal lands, lying adjacent to its main lines

The $2,000,000 of consolidated mortgage bonds were issued very largely to pay for these improvements. Two years before, the road had acquired an option on a large semi-developed coal property located at Spencer about 12 miles off from its main line. The purpose had been to finish the development of this property and to secure from it a large coal traffic. The $3,000,000 10-year coupon notes had been issued and sold, and the proceeds devoted very largely to the purchase of this coal property. The stock of the coal mine had been pledged as collateral for the 10-year coupon notes.

On the publication of the unfavorable statement of June 30, 1902, a committee of bankers, consisting of the trustees of the Central Division bonds, the agent of a large insurance company which owned $250,000 of the Eastern Division bonds, and the vice-president of a bank to whom the company owed $100,000 of the $405,321 bills payable, met and petitioned

STATEMENT OF OPERATIONS, CAPITAL ACCOUNT, ETC., FOR SIX YEARS ENDING JUNE 30[1]

	1897	1898	1899	1900	1901	1902
Miles of Road Operated	186	186	186	216	233	271
Passenger Train Mileage	358,858	384,920	381,864	382,642	401,553	493,716
Freight Train Mileage	514,975	545,896	473,412	602,317	721,612	821,619
Passengers Carried	269,198	289,937	315,512	340,069	458,987	501,987
Passengers Carried One Mile	6,047,862	6,252,254	6,592,990	6,808,181	9,536,748	11,967,434
Tons Freight Moved	1,113,527	1,018,475	1,092,776	1,468,034	1,607,487	1,888,911
Tons Freight Moved One Mile	103,963,254	107,865,885	103,929,375	153,749,459	162,702,497	200,109,716
Earnings						
Passenger	$120,756	$137,666	$146,564	$154,177	$178,474	$ 196,718
Freight	509,798	628,591	648,661	815,191	962,706	1,219,113
Mail and Express	19,140	18,399	22,411	22,558	22,203	24,119
Miscellaneous	27,554	33,697	52,859	49,253	55,136	61,654
Total Traffic Earnings	$677,248	$818,353	$870,495	$1,041,179	$1,218,519	$ 1,501,604
Operating Expenses and Taxes	492,407	576,518	568,338	649,331	772,770	991,301
Net Earnings over Expenses and Taxes	$184,841	$241,835	$302,157	$391,848	$445,749	$510,303
Other Receipts	.....	.....	.....	6,240	6,786	9,116
Available Revenue	$184,841	$241,835	$302,157	$398,088	$452,535	$519,419
Payments						
Interest on Bonds	92,874	143,045	150,000	187,500	390,542	570,000
Interest Discount and Exchange	753	2,277	65	.....	761	.....
Dividends on Preferred Stock	.....	(2) 70,268	(4) 144,866	(4) 144,000	(4¼) 167,000	.....
Balance (+ or −)	+ 91,214	+ 26,245	+ 7,226	+ 66,588	− 105,768	− 50,581
Gross Earnings per Mile	3,641.12	4,399.74	4,680.08	4,820.27	5,321.04	5,540.97
Operating Expenses and Taxes per Mile	2,647.35	3,099.56	3,055.57	3,006.16	3,245.64	3,654.25
Net Earnings per Mile	993.77	1,300.18	1,624.51	1,814.11	2,075.40	1,883.04
Expenses to Earnings	72.71%	70.45%	65.29%	62.37%	63.42%	66.00%
Average Rate per Passenger per Mile	1.99c.	2.20c.	2.21c.	2.27c.	1.87c.	1.64c.
Average Rate per Ton per Mile	0.49c.	0.59c.	0.62c.	0.53c.	0.59c.	.61c.

Capital Stock	$3,513,400	$3,600,000	$3,600,000	$7,100,000	$10,500,000	$10,500,000
Funded Debt	2,796,750	3,000,000	4,500,000	5,930,000	7,930,000	10,930,000
Equipment Contracts	130,270	55,658	12,342	.....	.....	.....
Accrued Interest on Bonds	34,950	37,500	37,500	75,000	104,792	129,300
Bills Payable and Interest on Same	71,893	21,729	.....	.....	.....	495,321
Net Current Liabilities	.....	35,134	25,385	.....	49,122	192,118[2]
Income Account	56,976	83,221	90,447	157,035	151,267	121,943
Total Liabilities	$6,604,239	$6,833,242	$8,265,674	$13,262,035	$18,735,181	$22,368,682
Railway and Equipment	$6,466,035	$6,505,125	$6,543,388	$11,774,758	$17,716,739	$20,181,659
Stocks of Other Companies	67,953	150,000	165,000	835,000	835,000	1,117,914
Other Investments	.....	11,433	1,525,191	541,227	92,305	900,000
Cash and Accounts	49,093	121,479	.....	62,846	27,233	68,491
Supplies on Hand	21,158	45,205	32,095	48,204	63,904	100,618
Total Assets	$6,604,239	$6,833,242	$8,265,674	$13,262,035	$18,735,181	$22,368,682

[1] First mtg. (Central Div.) 5% $1,000 gold bonds, due Oct. 1, 1926, int. April and October $3,000,000
First mtg. (Eastern Div.) 5% $1,000 gold bonds, due July 1, 1928, int. Jan. and July 1,500,000
First mtg. extension and improvement 5% 40-year gold bonds, due 1930, int. Feb. and Aug 1,430,000
Consolidated mortgage 6's due 1950 2,000,000
10-year coupon notes 5% 3,000,000

[2] About ⅓ incurred within six months.

the court for the appointment of a receiver. The president of the road and certain directors opposed the petition, but the prayer was granted by the court. A committee of the directors was immediately organized and proposed within 30 days a plan of reorganization.

Consider yourself one of these directors, what plan would you propose?

Problem LXIII

The Reorganization of the Portland and Danbury Railroad

The Portland and Danbury Railroad had been established 40 years ago. It had never been thoroughly successful and during the last few years, owing partly to antiquated management and partly to the fact that the timber tributary to its lines had all been cut away, the railroad had fared ill. There follows a brief summary of its condition at the end of 1911. The company passed into the hands of receivers in the early part of July on a non-resident creditor's bill. At the time in question $287,965.30 of the current liabilities had been contracted within six months of receivership; practically all for materials and supplies necessary for the continued operation of the road. About a quarter of the common stock was held by farmers and small tradesmen living along the line. About half of the stock was then held by banking interests who had exercised a nominal control over the railroad from 1903 to 1911. The remaining quarter of the common stock had been purchased from time to time by outside interests widely scattered. The bankers who held half the common stock were financially embarrassed and had pledged the stock as collateral for a loan of $60,000 at a New York bank.

Prepare a plan of reorganization of the road.

THE PORTLAND AND DANBURY RAILROAD COMPANY

Main Line of Road

Portland to Danbury	203.5 miles
Jones River Division: Jones River Junction to Cleveland	51.0 "
Sherman's Hill Branch: Sherman's Hill to Winchester	11.0 "
Other Branches: Buffalo Springs, 4; Hitchcock's Mill, 6; Beamon's, 3; Savidge's, 5	18.0 "
Total Length of all Lines Operated	283.5 miles

3rd rail, 4 m.; Sidings, 21 m.; Gauge, 4 ft. 8½ in. and 3 ft. Rail (steel), 35 and 56 lbs.

Rolling stock. Locomotive engines, 30. Cars; passenger, 29; baggage, mail and express, 3; freight (box, 250; platform, 429; coal, 3), 682; caboose,

6; logging, 50. Total cars, 770. Of this equipment, 20 locomotives, 22 passenger, 2 baggage, etc., 235 box, 360 platform, 6 caboose, and 60 logging cars were acquired through a car trust.

Operations for year ending June 30, 1911. Train mileage; passenger, 302,312; freight, 267,152; other, 291,062. Total, 860,526 miles. Passengers carried, 178,845; carried one mile, 3,226,109; average mile rate, 2.83 cents. Tons freight moved, 368,768; moved one mile, 18,495,653; average ton-mile rate, 1.95 cents.

Earnings:		*Expenses:*	
Passenger.....	$ 91,349.35	Transportation.....	$254,776.05
Freight.....	360,201.48	Maintenance of Equipment.....	103,338.52
Mail and Express...	24,098.23	Maintenance of Way and Buildings....	128,284.93
Miscellaneous.....	22,613.98	General.....	50,910.91
Total ($1,757.54 per mile).....	$498,263.04	Total ($1,895.28 per mile).....	$537,310.41
Loss from Operation.	$ 39,047.37		

Financial Statement, June 30, 1911. Capital stock (par $100), $5,754,890; funded debt (1st mortgage gold 6% 30-year $1,000 coupon bonds, due October 1, 1917, interest April and October), $4,952,000; equipment trust obligations, $313,960.23; current liabilities, $627,172.40. Total liabilities, $11,648,022.63. Detailed statement of equipment trust obligations, as of June 30, 1911 follows on the next page.

Problem LXIV

The Reorganization of the Northern Counties Light, Heat and Power Company

In 1911, Thomas S. Sargent and Company, Engineers, organized the Northern Counties Light, Heat and Power Company. It represented in 1920, a holding company owning only the common stocks of 9 small electric light and gas companies operating in the towns and cities of Northern Kansas. From 1912 to the summer of 1914, the holding company had paid dividends regularly on its preferred stock. The preferred stock dividend due August 15, 1914, was passed, the international turmoil being advanced as the excuse. Dividends were not resumed, although the reports sent to the stockholders at the end of each year were very reassuring.

Series or Other Designation	Date of Issue	Term	Cash Paid on Delivery of Equipment	Deferred Payments, Principal		Equipment Covered
				Original Amount	Amount Outstanding	
B—17—Central Car Trust Company	Jan. 1, 1909	60 Mo.	$17,110	$ 91,253.40	$ 55,512.48	2 locomotives, 100 flat cars, 4 passenger cars, 1 combination car, 50 box cars.
25— " " " "	Mar. 1, 1909	60 "	3,150	16,800.00	10,780.00	1 locomotive, 3 passenger cars.
26— " " " "	Mar. 1, 1909	60 "	3,000	16,000.20	10,266.78	2 locomotives.
27— " " " "	June 1, 1909	60 "	6,600	35,200.00	24,346.81	100 flat cars.
31— " " " "	Nov. 1, 1909	60 "	16,600	88,533.60	68,613.54	5 locomotives, 1 combination and 100 box cars.
33— " " " "	Jan. 1, 1910	60 "	13,560	72,319.80	58,458.50	2 locomotives, 100 flat cars, 3 passenger cars, 2 combination cars.
38— " " " "	Mar. 20, 1910	18 "	5,000	18,000.00	9,000.00	1 float.
31—American Car Trust Company.....	Nov. 20, 1909	16 "	2,000	8,000.00	1,612.50	5 passenger and 1 combination cars.
New York Equipment Company.....	Feb. 1, 1908	60 "	6,200	41,333.40	17,222.25	50 box cars.
" " " "	Mar. 1, 1909	60 "	5,000	26,666.40	16,888.72	2 locomotives, 60 flat cars, 4 passenger cars, 50 box cars.
B—190—R. R. Equipment Company	May 15, 1910	60 "	8,320	44,373.00	39,196.15	4 locomotives, 50 log cars
Humphreys and Gayce.....	July 1, 1910	12 "	1,375	4,125.00	2,062.50	2 locomotives.
			$87,915	$462,604.80	$313,960.23	

THE FOLLOWING REPRESENTS THE ABBREVIATED FINANCIAL AND OPERATING STATEMENTS AS OF MARCH 1, 1921

	BRANSTON	PEABODY	CURRENT RIVER	CONWAY	CARTERS-BORO	HAMILTON	ALBANY	STOUGHTON	CARYTOWN
Bonds (All in hands of public)	$500,000 (5's)	$1,768,000 (5's)	$218,000 (6's)	$306,000 (5's)	$1,000,000 (5's)	$ 670,000 (4's)	$100,000 (6's)	$800,000 (5's)	$ 92,000 (6's)
Notes (Investors)	.....	250,000 (6's)	.....	.....	1,000,000 (7's)	.....	.....	100,000	.....
Notes (Owned by holding company)	38,000	672,000	.....	195,000	786,000	218,000	21,000	382,000	25,000
Notes (in banks)	15,000	150,000	27,000	10,000	90,000	28,000	.....	50,000	1,000
Notes (Merchandise)	8,700	29,000	3,000	17,000	4,000	.....	.....	25,000	.....
Accounts Payable	4,318	61,716	2,700	6,313	9,878	6,741	492	16,704	918
Preferred Stock (All in hands of public)	.....	500,000 (C. 6%)	.....	.....	.....	200,000	100,000	600,000	....
Common stock owned by holding company and pledged to secure its collateral first lien bonds	500,000	1,000,000	250,000	500,000	3,000,000	1,000,000	100,000	500,000	100,000

The Company defaulted the March 1, 1921 interest on its collateral trust, prior lien 5% bonds. No reasons were alleged, other than the general financial depression. Auditors appointed by a committee representing investors mildly hostile to the interests of the Sargent firm made an exhaustive report. The main features of this report brought out the simple fact that the extensions and improvements undertaken by the operating companies failed to prove as profitable as the engineers had anticipated. Operating expenses increased, relatively and absolutely, faster than gross earnings. The costs of the extensions of the operating companies were met at first by the sale of the underlying securities of the operating companies themselves. Later the extensions were paid for by short time borrowings —notes and bank loans—of the operating companies. During 1919 and

INCOME AND EXPENDITURE ACCOUNT YEAR ENDING MARCH 31, 1921

	Branston	Peabody	Current River	Conway	Cartersboro
Gross Earnings (Customers' receipts)	$103,716	$567,313	$42,716	$49,133	$611,442
Operating Expenses (including taxes)	69,816	310,118	41,102	37,967	318,961
Dividends on Preferred Stock	.....	30,000	.....	.....	.....
Amount of Dividends paid to holding company					
Cash	.....	30,000	.....	.....	120,000
Scrip	.....	30,000	.....	.....	30,000

	Hamilton	Albany	Stoughton	Carytown
Gross Earnings (Customers' receipts)	$209,097	$28,000	$291,662	$17,671
Operating expenses	117,317	21,000	287,117	21,718
Dividends on Preferred Stock	14,000 (scrip)	.....	.....	.....
Amount of Dividends				
Cash	.....	.....	.....	.....
Scrip	20,000	.....	.....	.....

1920, even this expedient failed, and the holding company made large advances to 6 of the operating companies. The money for these advances were secured by three methods. (1) Ordinary, unsecured 3 to 6 months loans from its banks, regularly renewed at each maturity. (2) The sale in the spring of 1920 of $1,000,000 2-year unsecured 8% notes to investment bankers, and (3) the issue—followed by the pledge—of $1,374,000 collateral trust prior lien bonds. The collateral trust prior bonds were used to secure a loan of $1,000,000 from the North Avenue National Bank of Chicago. Subsequently the right of the corporation to issue this particular block of bonds became subject to extended litigation.

The following represents the balance sheet of the Northern Counties Light, Heat and Power Company itself as of March 1, 1921 (even 000).

Assets		*Liabilities*	
Securities of Operating Companies..... (Representing the entire common stock issues of nine electric light and power companies)	$ 7,941,000	Collateral Trust Prior Lien 5% Bonds Due March, 1941.....	$ 4,574,000
		Notes Payable (less than one year).....	786,000
		Two Year 8% Notes Due April 1, 1922...	1,000,000
Collateral Trust, Prior Lien Bonds Pledged as Collateral.....	1,574,000	North Auburn Nat. Bank Loan.....	1,000,000
		Preferred Stock.....	1,500,000
Demand Notes of Operating Companies....	2,337,000	Common Stock.....	2,000,000
		Surplus.....	1,293,000
Scrip Dividends of Operating Companies 1914 to 1920.....	160,000		
Bond and Note Discount.....	110,000		
Miscellaneous Assets..	27,000		
Cash.....	4,000		
	$12,153,000		$12,153,000

The income statement for the year ending March 1, 1921, was as follows:

Receipts from Dividends of Subsidiary Companies.....		$230,000
Interest on Collateral Prior Lien 5's September 1, 1920...	$150,000	

Interest on 2-Year Notes Due April 1, 1922—October, 1920	$40,000	
Bank Interest	49,817	
Salaries, General Expenses	38,791	
		$278,608
Deficit		$ 48,608

The collateral trust, prior lien bonds had been sold at various times from 1911 to 1915, to investors. The initial offering was at 91½. The preferred stock had been sold originally in blocks of 3 shares of preferred and 1 share of common for $250. Of the $2,000,000 of common stock, approximately $1,000,000 was owned by Thomas S. Sargent and Company, but pledged with a New York bank for a loan of $80,000. Five hundred thousand dollars ($500,000) of the common was owned outright by the syndicate which originally sold the blocks of common and preferred stocks. This, except for a cash commission of 2% on the gross sales to customers, represented their entire banking profit.

Prepare an exhaustive report covering the reorganization of the company.

Part VI—Investments

INTRODUCTORY NOTE TO PROBLEMS ON INVESTMENT

In considering investment problems, it should be observed that the point of view is diametrically opposed to that of corporation finance. In matters concerning the financial policy of corporations the purpose is to buy capital of the community at as cheap a rate and under the least arduous conditions. From an economic point of view the question is merely what is the lowest rate at which the entrepreneur can obtain capital from the capitalist and what are the least rigorous requirements as to the security of the loan. In the case of investment problems the situation is exactly the reverse. Here the investor, as the capitalist, seeks to obtain from the corporation the highest rate of interest on a loan subjected to and circumscribed by the most rigorous and exacting conditions. Again, from the economic point of view the question is merely what is the highest rate of interest that the capitalist can exact from the entrepreneur and how rigorous support he can secure for his loan.

In considering any specific investment or any specific lists of investments, two elements determine the rate of return. They are: the absolute rate of interest represented by the demand and supply price for capital. This has been called by the economists "pure interest." In addition, every investment bears a certain loading, the amount of which varies with the market estimation of the particular risk involved. That is, in any given return on an investment there are two factors; a rate of pure interest—which would be the

same for all investments, provided absolutely no risk were involved; and secondly a compensation for risk representing a premium to insure the investor against the loss of principal in the particular case. The pure interest, for illustration, is the same on government bonds as on mining stocks. Only in the former case the loading, because of risk, is almost negligible, whereas in the latter case it represents the major part of what the investor considers as income return.

Skill in investment matters consists in selecting an investment where, by reason of market conditions, the corporation is forced to pay a higher risk than the security of the investment warrants. That is, the investor buys greater security than the income return warrants. A good investment, therefore, is not necessarily a secure one. The term "good" as applied to investment means merely the ratio between the absolute risk involved in the investment and the amount of compensation which the investor receives for the risk. For illustration, certain Massachusetts gas and electric company stocks have, for years, returned to the investor a very small rate. This is due to the fact that these securities were non-taxable in Massachusetts and possessed to the Massachusetts trustee the glamour that goes with nearness. The premium of risk, therefore, that these investments carried was very small, far less than their risk warranted. They were, therefore, poor investments, whether their rate of return was high or low. The same reasoning applies to the majority of municipal bonds and obligations of states and counties. On the other hand, certain public utility bonds of far western cities, not easily brought to the notice of eastern capitalists, sold so as to yield a high return to the investor. This return was much higher than the inherent risk of the enterprise warranted. They were, therefore, good investments whether the actual income was in any particular case high or low.

In determining the value of any specific investment at least 8 separate factors should be considered:

1. Economic conditions: All investments decline in value during periods of descending economic conditions. The fall in stocks is much more precipitous than in case of bonds, but both are affected. During such periods investors should confine themselves to short-term notes or commercial paper so that on maturity of these obligations they may reinvest their funds in permanent investments at lower levels of price. During the ascending swing of the economic pendulum, stocks and bonds appreciate in price. Ordinarily, the upward trend of bonds precedes and is slower in movement than the upward trend of stocks. During such periods investors should purchase long-term securities.

2. Stocks or bonds: The distinction between stocks and bonds should be borne clearly in mind. The owner of stocks is, as a partner in the enterprise, entitled to extraordinary profits at times of extraordinary success, but subject, at the same time, to extraordinary losses at times of business failure. Stocks are not, under ordinary circumstances, appropriate investments for persons or institutions directly dependent upon income, owing to the greater inherent risk. Preferred stocks of all descriptions should be avoided. They involve the owner in all the risks of partnership in an enterprise, but assure to him only a limited return. One of the most unfortunate tendencies, from an investor's point of view, is the increasing use of preferred stocks. Experience has shown that at the time of the failure of an enterprise the preferred stockholder is treated with little greater leniency than the common stockholder. If an enterprise is so successful that one wishes to participate in its prosperity, the common stock should be bought. On the other hand, if the enterprise is not of such inherent soundness that an investor would feel justified in purchasing the

common stock, he should confine himself to the bonds. There is no middle ground.

3. Type of industry: Certain industries are more staple in their earning capacities than others. Certain ones are more susceptible to business fluctuations. It is interesting to note that there are some industries that are most prosperous during periods of depression; as for example, the furnishing of artificial gas to old established communities. It is important for the investor to consider carefully the type of the investment in which he places his funds, and the susceptibility of that industry as a whole to the influence of economic, political, and social conditions.

4. Credit of the issuing corporation: This is distinctly different from the status of the security itself. For example, the Pennsylvania Railroad has an unquestionably higher general credit than has the Erie Railroad, yet it is probable that some of the underlying Erie bonds are more secure as investments than some of the junior securities of the Pennsylvania.

5. Legal restrictions: The bond issue or the preferred stock issue should be considered carefully from the point of view of the extent to which future policies of the corporation may affect it. A closed issue of bonds is always more secure than an open issue. A preferred stock issue should be very carefully scrutinized from the point of view of the possibility of future prior liens, mortgages, and bank debts; also, the ease with which the corporation may increase the outstanding amount of preferred stock.

6. Strategic position of the security in question, with respect to other securities of same corporation: This matter is very important in considering railroad securities. A bond secured by a mortgage on a main line of a system is much more secure than a bond secured by a mortgage on a branch line. For example, the fifth mortgage on the main stem of

the Erie Railroad is much more secure than the first mortgage on the New York and Greenwood Lake Branch.

7. Property behind the security: This is more important in public utilities and railroads than in industrial corporations, because if the former fail by reason of inadequate rates the public service commissions and the courts will consider carefully property values in determining fair earning power.

8. Earnings to be allocated to the particular security: If a security as, for instance, a mortgage bond, covers only the property of a part of the corporation, it is important to consider the inherent earning capacity of the particular part covered. For example, a comparison must be made between the bond of a public utility which covers only the generating station, and another bond of the same utility covering only the distributing part of the system. Under ordinary circumstances, it is possible to build a new power house or secure power from outside sources, but a power house without a means for distributing its power has no earning capacity.

In a study of investments, constant use should be made of the various manuals—Poor's Manual of Railroads and Moody's Manual of Railroads and Corporation Securities. For railroad bonds White and Kimble's Atlas is almost indispensable. A smaller, cheaper atlas is now accessible.

Problem LXV

Compare, arrange in order of relative excellence, the following bonds, granting that they may be purchased yielding approximately the same gross return and net yield:

Syracuse Lighting Company first 5's, 1951.
American Telephone and Telegraph collateral trust 5's, 1946.

Wabash Railroad, Detroit and Chicago Extension 5's, 1941.
Northern States Power first and ref. 5's, 1941.
United States Rubber first and ref. 5's, 1947.
Mobile and Birmingham prior lien 5's, 1945.
American Smelting and Refining, 5's, 1947.
Lackawanna Steel Company, con. 5's, Series A, 1950.
New York and Greenwood 5's, 1946.
Craig Valley first 5's, 1940.
Norfolk and Southern first 5's, 1941.

Discussion of Problem LXV

Assuming the gross return and net yield to be approximately the same, a comparison of values rests solely on the intrinsic merits of the bonds.

Certain elements of comparison that give no ground for variation should be eliminated first. The bonds all bear 5% interest, and mature about the same time. The influence, then, of future changes in the rate of interest may, therefore, be neglected. All the bonds are listed on the New York Stock Exchange.

There are 5 railroad bonds, 3 manufacturing and 3 public utility bonds. At the time this discussion is being written (March, 1921) there is no question but that the general industry of public service stands first and that of manufacturing last. In arranging points of comparison (see table on page 111) the word "good" is placed in the column headed "general industry" opposite the public utility bonds, the word "fair" opposite the railroad bonds, and the word "poor" opposite the industrial bonds.

Consider next the general credit of the company of which the bond is an obligation. Among the public utilities the general credit of the Syracuse Lighting Company is very high. It is controlled by the United Gas Improvements Company of Philadelphia. The general credit of the American Telephone and Telegraph Company is not as good as formerly owing to the continual issue of new securities. There is a well-founded suspicion that federal rate regulation, similar to that exercised by the Interstate Commerce Commission over the express companies, may seriously curtail future earnings.

Similar analysis should be applied to the railroads and manufacturing enterprises, represented in the list. Among the former the general credit of the Mobile and Birmingham is distinctly the best, that of the Wabash Railroad the worst. Among the manufacturing companies the general

credit of the American Smelting and Refining Company is best, that of the United States Rubber Company distinctly the worst, in fact probably the poorest of any of the corporations represented in the list.

The special position of the security in question, with respect to other

	General Industry	General Credit of Corporation	Closed Lien	Absolutely First Lien	Strategic Position of Lien	Margin of Earnings	Probable Margin of Property	Relative Value in Group	Absolute Order
A *Public Utility*									
Syracuse Lighting.....	Good	Good	Yes	Yes	Good	Good	Good	1	2
American Telephone and Telegraph.....	Good	Fair	No	No	Poor	Good	Good	2	5
Northern States Power...	Good	Fair	No	No	Fair	Fair	Fair	3	8
B *Railroads*									
Wabash, Detroit and Chicago.....	Fair	Poor	Yes	Yes	Fair	Poor	Good	4	9
Mobile and Birmingham..	Fair	Good	Yes	Yes	Very Good	Good	Good	1	1
New York and Greenwood Lake.....	Fair	Poor	Yes	Yes	Fair	Fair	Good	3	6
Craig Valley.....	Fair	Fair	Yes	Yes	Poor	Fair	Fair	5	10
Norfolk and Southern....	Fair	Fair	Yes	Yes	Fair	Fair	Good	2	3
C *Industrials*									
United States Rubber....	Poor	Poor	No	No	Good	Fair	Good	3	11
American Smelting.....	Poor	Fair	No	Yes	Good	Good	Good	1	4
Lackawanna Steel.....	Poor	Fair	No	No	Fair	Poor	Fair	2	7

securities of the company, is of very great importance. Among the public utilities the Syracuse Lighting first 5's, are an absolute closed prior lien on the electric properties of the city of Syracuse, New York. With the Syracuse Gas Company's first 5's—altogether, representing interest charges of $250,000—they are a prior lien on net earnings which have averaged well

over $800,000 for the last 5 years. The American Telephone and Telegraph 5's and the Northern States Power 5's, are neither of them first liens on the entire property covered. The mortgage of the Northern States is practically an "open end" indenture.

All the railroad bonds are first liens, closed mortgages, on their respective properties. But the Mobile and Birmingham section is of much greater importance to the Southern system than is the Detroit and Chicago to the Wabash, the Greenwood Lake to the Erie, or the Craig Valley to the Chesapeake and Ohio. The Norfolk and Southern road is not of great strategic importance in itself.

A similar procedure of analysis and comparison with respect to other investment canons of value should be applied to the individual bonds of the list. All these results should then be summarized in a comparative table. In the table on the preceding page the order in which the bonds are given is the same as in the list on page 109 with the exception that the bonds have been grouped according to the type of industry in which the issuing company is engaged.

Problem LXVI

Relative Value of Listed General Long-Term Bonds, of Large Railway Systems

Granting that the following bonds sell at approximately the same price arrange in the order of excellence:

Chicago Milwaukee and St. Paul, 4's, 1989.
Northern Pacific Railway prior lien 4's, 1997.
Norfolk and Western first 4's, 1996.
Chicago and Northwestern 4's, 1987.
Philadelphia and Reading Coal and Iron and Reading Company, 4's, 1997.

Problem LXVII

A Comparison of Long-Term Underlying Listed Bonds Belonging to the Same General System but Covering Different Parts

Arrange in the order of excellence:

Mohawk and Malone first 4's, 1991.
Kanawha and Michigan first 4's, 1990.
New York and Putnam first 4's, 1993.
Carthage and Adirondack first 4's, 1984.
Battle Creek and Sturgis first 3's, 1989.
New York and Harlem first 3½'s, 2000.
St. Lawrence and Adirondack first 5's, 1996.

Problem LXVIII

Relative Value of Listed Underlying Bonds of Different Railway Systems, With Guarantees

On or about March 1, 1921 the following bonds, maturing at about the same time, sold for approximately the same price. Arrange them in the order of relative excellence as an investment:

Brunswick and Western first 4's, 1938.
Milwaukee, Sparta and Northwestern first 4's, 1947.
New York and Erie first 4's, 1947.
Pacific Railroad of Missouri first 4's, 1938.
Pocahontas Coal and Coke first 4's, 1941.

Problem LXIX

Relative Value of Small Issues of Unlisted Underlying Medium-Term Railroad Bonds, Without Interest nor Principle Specifically Guaranteed

The following bonds sold March 1, 1921 at approximately the same price. Arrange them in the order of their excellence as investments:

Little Rock and Hot Springs Western R. R. first 4's, 1939.
Paint Creek Branch first 4's, 1945.
St. Johns River Terminal first 4's, 1952.
Columbia and St. Louis Railroad first 4's, 1942.
Chicago, Indianapolis and St. Louis first 4's, 1953.

Problem LXX

Selections from Miscellaneous List of Investments

James Sterling, a hardware merchant in Westerly, Rhode Island, dies suddenly. His executor sells his business for $47,000 cash. The executor then turns over to the widow, 43 years old, no children, the following securities together with the money:

Problem. What, if any, securities should the widow sell and how may she best invest her cash in view of the securities she retains?

10 shares Chicago and Northwestern common stock.
$2,000 Illinois Central, Litchfield Division 3's, 1951.
50 shares United States Smelting and Refining 7% preferred stock.
3 shares Standard Oil Company of New Jersey common stock.
2 shares Standard Oil Company of New Jersey preferred stock.
20 shares American Telephone and Telegraph Company common stock.
10 shares Fall River Gas Company common stock.
$4,000 Chicago, Milwaukee and St. Paul general 4½'s, 1989.
$3,000 Peoples' Gas, Light and Coke Company of Chicago first 6's, 1943.
$10,000 New York Central and Hudson River 3½'s, 1997.
$3,000 Cleveland and Pittsburg, General Guarantee 4½'s, 1942.
$2,000 Manhattan Railwayof New York first 4's, 1990.
5 shares Central Leather Company preferred stock.
19 shares Wabash Railroad Company common stock.
$2,000 New York, New Haven and Hartford deb. 3½'s, 1956.
20 shares New York, New Haven and Hartford common stock.
14 shares New York Central Railroad common stock.
10 shares Quaker Oats preferred stock.
$1,000 New York and Putnam first 4's, 1993.
$1,000 Southern Railway first 5's, 1998.
$3,000 Standard Gas and Electric Co. (Delaware) deb. 6's.
$1,000 Cities Service Convertible 7% deb. 1966.
$10,000 American Agricultural Chemical first 5's, 1928.
$1,000 Indianapolis and Louisville Railway first 5's, 1942.
3 shares Chesborough Manufacturing Company.
4608 shares of miscellaneous oil and mining shares for which there was no market and which the executor valued at $1 for the lot.

Problem LXXI

Selection for Purposes of Sale

An insurance company had the following blocks of railroad bonds. A conflagration occurred in a small southern city as a result of which $335,000 must be raised immediately from the sale of a part of these bonds. Granting that the insurance commissions' valuations can be realized from the sale on the open market, what should be sold?

	Per Ct.	Due	Par Value	Insurance Commissioners' Valuations
Alabama Midland Railway, first mortgage	5	1928	$50,000.00	$48,500.00
Baltimore and Ohio R.R. Co. (Pittsburg, Lake Erie and West Virginia System) refunding mortgage	4	1941	50,000.00	34,500.00
Central Pacific Railway, first refunding mortgage, gold	4	1949	200,000.00	156,000.00
Chicago and Northwestern Railroad sinking fund	5	1929	133,000.00	129,010.00
Chicago, Burlington and Quincy Railroad Company (Illinois Division) mortgage	3½	1949	200,000.00	156,000.00
Chicago and Erie Railroad, first mortgage	5	1982	60,000.00	54,600.00
Erie Railroad prior lien, gold	4	1996	100,000.00	64,000.00
Illinois Central Railroad (Louisville Division and Terminal)	3½	1953	50,000.00	35,000.00
Lehigh and New York Railroad Co. first mortgage	4	1945	100,000.00	80,000.00
Missouri, Kansas and Eastern Railroad, first mortgage	5	1942	100,000.00	45,000.00
New York Lackawanna and Western Railway Company, first mortgage	6	1921	58,000.00	58,000.00
New York Ontario and Western Railway Company, general mortgage	4	1955	200,000.00	126,000.00
Northern Pacific Railway Company, prior lien l. g. gold	4	1997	120,000.00	97,000.00
Oregon and California Railroad Company first mortgage	5	1927	175,000.00	162,750.00
Philadelphia and Reading Railroad, terminal, gold	5	1941	150,000.00	150,000.00
Savannah, Florida and Western Railroad first mortgage gold	6	1934	100,000.00	106,000.00
Union Pacific Railroad first mortgage and l. g gold	4	1947	75,000.00	63,750.00
Wheeling and Lake Erie Railroad (Lake Erie Division, first mortgage)	5	1926	75,000.00	69,000.00

Problem LXXII

Comparison of Two Large Issues of Well-Known, Long-Term Railroad Bonds

Make a careful comparison, from every point of view, of:

Atchison, Topeka and Sante Fe general 4's, 1995.
Northern Pacific Railway, prior lien and land grant 4's, 1997.

These two bonds, ordinarily, sell for about the same price and students of investments have given them about the same rating.

Which is, in your judgment, the better bond? Study the problem from every conceivable point of view.